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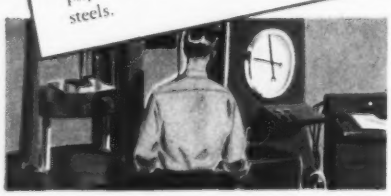

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OIL WORLD

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FOR TIMELY, COMPLETE
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Washington Highlights

Dan A. Kimball of Los Angeles has been named Assistant Secretary of the Navy for Air. President Truman appointed Kimball to succeed John Nicholas Brown. Kimball, who will be 53 March 1, is executive vice president of Aerojet Engineering Corporation of Azusa, California, and vice president and director of General Tire and Rubber Company. During World War I, Kimball served as a lieutenant in the Army Air Forces and trained as pilot in the same group as General James Doolittle. The latter is now a Shell Oil Company executive.

The Research and Development Board has prompted the forming of a committee designed primarily to determine policies on research and development in fuels and lubricants as they may affect the nation's military establishment. The committee is delving into organic and inorganic liquids, lubricating agents, solid and gaseous fuels, hydraulic fluids, antifreeze compounds and instrument oil. W. M. Holaday, director of research for Socony-Vacuum, is chairman of the committee.

A complete listing of American and foreign patents on shale oil products has been published and is being distributed by the U. S. Bureau of Mines. Representing results of a survey commenced in early 1944, copies of the publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. It is entitled "An Index of Shale Oil Patents" and is bulletin number 467.

Congress has been asked by the administration to grant the Government the necessary power to issue oil and gas leases for lands under coastal waters. The request was contained in a bill nearly identical with a measure sent to Congress last year, but not acted upon. The Government's new bill has the approval of Attorney General Clark, Interior Secretary Krug and Defense Secretary Forrestal. Oil and gas leases at present are issued by the various states. The latest measure to Congress would direct the Federal Government's leasing of the land when it takes over active control from the states. Bills were introduced in the last Congress to give the States controls over tidal lands, on which, however, no final action was taken. The Supreme Court ruled in 1947 that in the case of California at any rate, the Federal Government had "paramount interest" over submerged lands along the coast line.

Hopes are held by Commodore W. G. Greeman of the U. S. Navy that new geological data and an expanding drilling campaign will demonstrate by 1953 that oil in commercial amounts can be produced in Northern Alaska. He said in a speech before petroleum industry equipment manufacturers meeting in Tulsa, Okla., that Alaska oil development is moving forward with accelerated speed and certainty, according to advices received here.

President Truman's demand for power to reorganize the Government's executive branch to foster economy and efficiency has the solid backing of Herbert Hoover. In discussing governmental economics, Mr. Hoover said "I believe this country has reached the saturation point by way of taxation. Reorganization proposals have been continuously before Congress for 40 years. This is the first formidable attempt to solve the problem."

Official Washington is evidencing considerable interest in the development of a new flame-resisting and bullet-sealing oil tank for aircraft of the Navy. B. F. Goodrich Company, the developer, announced that the new tank withstands temperatures of 2000-deg. Fahrenheit. An outer coating on the container combines American processed rubber with other materials. This coating also is applicable to gasoline tanks and other containers for fluids of volatile characteristics, the company made known.

Rumors circulating among members of the Washington press have California oilman Edwin W. Pauley succeeding Army Secretary Royall and Under Secretary Chapman succeeding Interior Secretary Krug in a cabinet shakeup in the near future. The rumors, however, are entirely without official confirmation from any quarter.

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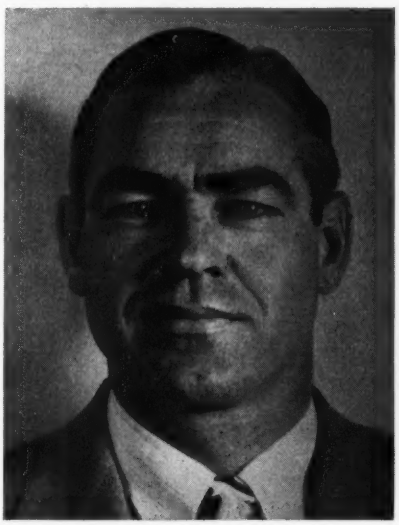
Rapid Method of Stack-Gas Analysis for Total Sulphur and Sulphur Dioxide

C. W. KEY
Richfield Oil Corp.,
Wilmington, Calif.

The normal requirements for refinery stack-gas analyses has for many years consisted primarily of a simple Orsat analysis for carbon dioxide, carbon monoxide, and oxygen. These data are obtained in order to check the efficiency of combustion in boilers, heaters, and furnaces by ascertaining that a sufficient excess supply of oxygen has been maintained completely to oxidize the fuel. Because, in normal operation, an analysis for these three gases is all that is required to establish efficient combustion, a complete flue-gas analysis is unnecessary. However, most refineries, through the use of their own fuel gas which is a natural result of cracking operations with the simultaneous production of large quantities of light hydrocarbon gases, or by the use of fuel oils, are 80 to 100 per cent self-sufficient in supplying their own fuel requirements. Because of the sulfur content of these refinery fuels, it is natural that sulfur dioxide would be formed during combustion operations. This characteristic is particularly true on the Pacific Coast where a high percentage of the crude oils contains appreciable quantities of sulfur; however, because most refineries were located in areas somewhat removed from heavily populated areas, there was little concern given to the amount of sulfur dioxide that was being discharged to the atmosphere from these sources. It was generally believed that the concentration of this gas was sufficiently reduced by atmospheric dilution that it was rendered non-objectionable. For this reason little thought was given to analytical procedures by which the sulfur content in refinery flue gases could be readily determined.

As a result of the tremendously expanded refining facilities which was erected during the "all-out" effort of the late war and the subsequent unprecedented demand for petroleum products, there are greater volumes of stack gases being discharged into the atmosphere today than ever before. Add to this the atmospheric discharges which have resulted from the expanded production facilities of other industries, and it can be readily seen that an analysis of the potential air pollutants becomes a very complex problem.



C. W. Key

The passage of air-pollution-control legislation by many of the state legislatures, counties, and municipalities makes it mandatory that each industry obtain more complete stack-gas analyses. However, long before the enactment of air-pollution-control legislation, many of the petroleum refining companies had offered their analytical services and facilities for the study of this problem and were actively engaged in the development of analytical procedures by which the identity and amount of air contaminants could be established. The close cooperation between the state and local authorities and the West Coast refineries, particularly those in the Los Angeles area where the "smog" problem is most acute, has been maintained.

It was readily realized that any air pollutant that would originate from the refining of petroleum would most likely consist of sulfur compounds in the stack gases; therefore, a concerted effort should be made to develop analytical procedures whereby these compounds could be readily determined. Inasmuch as in the normal Orsat analysis of gases by absorption any sulfur dioxide or sulfur trioxide present would be absorbed along with the carbon dioxide, this method could not be used to determine the amount of sulfur in these forms that was present. A survey of the literature disclosed that several methods were available for such determinations; however, these were quite time-consuming or difficult to manipulate. It was considered desirable, therefore, to develop a technique which possessed the following advantages: 1, reasonable accuracy; 2, rapidity; 3, simple apparatus, and, 4, simple but reliable sampling procedures and equipment to determine, primarily, the total sulfur content and, secondarily, the sulfur-dioxide and sulfur-trioxide distribution.

With the foregoing objectives in mind, the first approach to such a problem naturally involved sampling techniques and equipment. These will of necessity vary with the design of the stack which is to be sampled; however, it has been found that a straight piece of pyrex glass or stainless-steel tubing of approximately 3 mm or 4 mm diameter gives satisfactory results in obtaining a representative sample. The length of the tube should be varied according to the thickness and diameter of the stack, but should in any event extend into the stack at least one-third to one-half the distance across the diameter. Probes of assorted lengths should be part of the standard apparatus. The external end of the probe should not extend beyond the walls of the stack more than 1 in., thereby insuring a sufficiently high tem-

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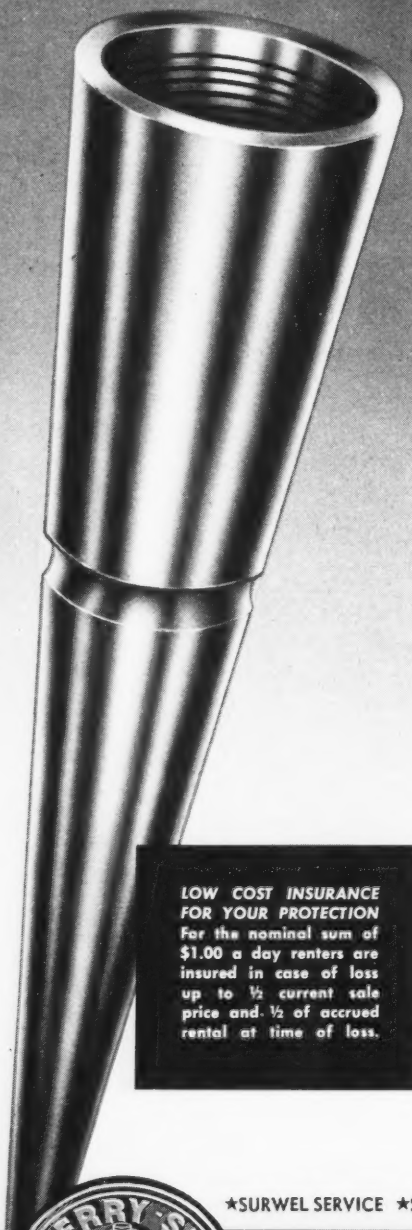

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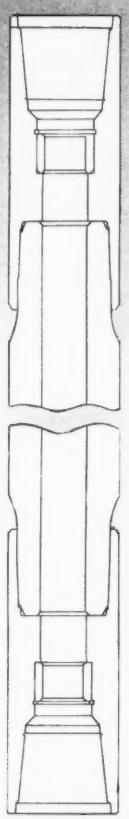

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perature to prevent condensation losses of any of the vapor before they enter the sample collector.

Actually, there are two parts to this method, either of which may be performed independently of each other, although simultaneous analysis of both parts gives more complete information. The principle of the first part is the determination of total sulfur in flue gases by the oxidation of sulfur dioxide with a 3-per-cent solution of hydrogen peroxide and the simultaneous absorption of the resulting and coexisting acid gases containing sulfur. The principle of the second part is the determination of sulfur dioxide in flue gases by mass-spectrometer analyses.

The apparatus, reagents, and procedure required for the total sulfur determination are as follows:

Apparatus

A modified ASTM lamp sulfur absorber with glass-bead packing.
Pyrex-glass or stainles-steel probes of 3-mm to 4-mm diameter in varying lengths.
Calibrated aspirator bottle (approximately 1-liter capacity).
Rubber or Tygon tubing.
Pinch clamps.
Rubber aspirator bulb.

The assembled apparatus, without the sample probe and rubber aspirator bulb but with a convenient carrying case, is shown in Fig. 1.

Reagents

3-per-cent aqueous solution of hydrogen peroxide.
0.01 normal sodium hydroxide.
Bromocresol green indicator.

Procedure

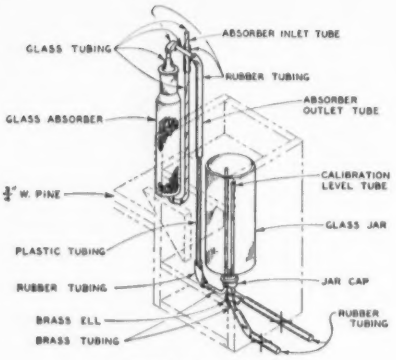
The modified ASTM sulfur absorber is charged with 70 ml to 100 ml of hydrogen-peroxide solution. The calibrated aspirator bottle is filled with water to the capacity which is regulated by a ¼-in. overflow tube. The inlet tube of the calibrated aspirator bottle is connected to the outlet tube of the absorber with a short piece of rubber or Tygon tubing. A piece of rubber tubing at least 3 ft long is connected to the drain tube of the aspirator bottle. The length of this tube must be sufficient completely to drain the aspirator bottle to its calibrated volume. The probe is then inserted into the stack the proper distance, and is thoroughly purged with the rubber aspirator bulb which is attached to the external end of the probe with as short a piece of rubber tubing as possible. After the probe has been thoroughly purged, the rubber connector is temporarily pinched shut to prevent air from contaminating the stack gases during the removal of the aspirator bulb and the connection to the inlet tube of the absorber tower. When the latter has been properly connected to the calibrated aspirator bottle, the pinch clamp is then removed from the drain line of the aspirator bottle. The flow of water from the latter draws the gas sample through the hydrogen-peroxide solution at a rate such that the aspirator bottle will be completely drained in approximately 2 min to 3 min. This moderately rapid rate aids in the prevention of condensation of any sulfur trioxide that may be present. When the water has been completely drained from the aspirator bottle, the inlet and outlet tubes of the absorber are closed with pinch clamps and the sample is delivered to the laboratory for titration. The absorber assembly is thoroughly rinsed with distilled water, and the bromocresol green indicator is added prior to the titration with the standard sodium-hydroxide solution. The expansion arm, which was removed from the original ASTM sulfur absorber, in order to reduce the volume of the inlet tube of the absorber, is attached by a short piece of rubber tubing to the inlet tube during the titration in order to facilitate the mechanics of this operation. This assembly is shown in Fig. 2.

The mol per cent of the total sulfur is determined by the following calculation:

$$\text{Mol per cent of sulfur} = \frac{(\text{Milliliters of sodium hydroxide})\ (\text{normality})\ (22.4)\ (100)}{(2)\ (1{,}000)\ (\text{liters of sample})}$$

The second part of this method is the determination of sulfur dioxide by mass spectrometer. Inasmuch as it is good engineering practice to supply an appreciable excess quantity of air along with the fuel in combustion operations, the predominant proportion of sulfur constituents of refinery fuels will be converted to sulfur dioxide; therefore, it is often desirable to have available a rapid method by which the amount of this gas can be determined along with the other constituents of the stack gases. The mass spectrometer may be very conveniently used for this purpose when a few simple sampling precautions are observed. Often it is necessary only to determine the sulfur-dioxide content of the stack gases, in which case the mass-spectrometer procedure is further simplified.

The sample for mass-spectrometer analysis must be taken in a well evacuated glass bomb which has been previously coated with black lacquer or paint, and which contains a generous quantity of anhydrous phosphorous pentoxide to absorb the water vapors. The application of black lacquer to the bomb reduces the possibility of ultraviolet rays affecting the sample between the time the sample is taken and analyzed. A convenient bomb for this purpose is one having a capacity of approximately 250 ml, and to which is attached a 3-way **T**-type stopcock with a 4-mm **T-Z** 120-deg straight bore plug and an inner member spherical joint. This bomb is shown in Fig 3. The 4-mm bore in the stopcock is of sufficient size to permit placing the phosphorous pentoxide into the bomb through a small funnel designed for this purpose. The sample bombs with the T-Z 120-deg* stopcock may be purchased from the Greiner Glassblowing Laboratory, Los Angeles, Calif. The phosphorous pentoxide cannot be drawn into the bomb successfully by vacuum pump, as it absorbs excessive moisture from the air. The side arm of this stopcock facilitates purging the sample probe and stopcock bore before admitting the flue gases into the bomb. The phosphorous pentoxide should be charged through this stopcock; because, during transportation to and from the point of sampling and during the actual sampling operation, any of this material adhering to the walls of the glass will absorb mois-



Sampling Assembly.

FIG. 1

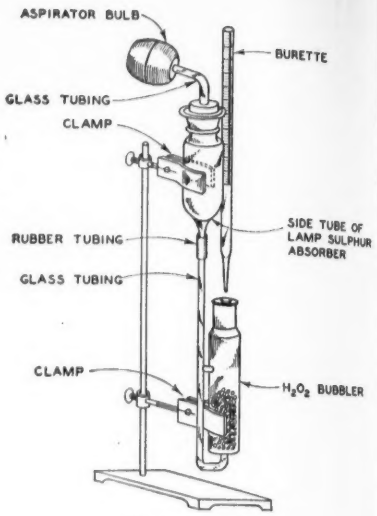
Notes: Box made of ½" Plywood except where otherwise noted. "+" Denotes location of Pinch Clamps. Copper Tubing Brazed to Metal Jar Cap.

ture. The stopcock on the opposite end of the bomb should then be used to admit the sample into the mass-spectrometer inlet system, thereby precluding the possibility of getting droplets of water that have collected in the phosphorous pentoxide into the mass-spectrometer system. As a further precaution against water entering the mass-spectrometer system, the sample bomb should be inverted several times in rapid succession immediately after the sample has been taken. This operation intimately contacts the gases with anhydrous phosphorous pentoxide which absorbs any moisture present. When the phosphorous pentoxide has been properly charged to the bomb, it will fall from one end of the bomb to the other as a very fine powder. This technique will, of course, have to be perfected with an unpainted bomb.

The same sampling probe is used to obtain both the sample for mass-spectrometer analysis and the sample for total sulfur analysis by the oxidation and absorption procedure described previously herein. In fact, it is generally desirable to obtain both samples in rapid succession so that a check between the two parts of the analytical procedure may be obtained; or, in the event sulfur trioxide may be present in the stack gases, it may be determined as the difference between the value obtained as total sulfur and that as sulfur dioxide.

The sample bomb in which the stack-gas sample has been obtained is attached to the mass-spectrometer inlet system by a short piece of new rubber tubing. As pointed out previously, the opposite end from that through which the sample was admitted into the bomb should be used to transfer the sample from the container into the mass-spectrometer inlet system. The sample pressure is then recorded and the sample ionized in the conventional manner for mass-spectrometer analyses. The 44- and 64-peak heights are then measured, the latter being divided by the former to give the mol ratio of sulfur to carbon. These data provide a rapid check against the sulfur-to-carbon ratio of the fuel, which should remain reasonably constant once a unit is "on stream," irrespective of wide variations that may occur in the amount of excess air supplied to the furnace. Because the mol ratio of the sulfur to carbon in the stack gas should equal the sulfur-to-carbon ratio of the fuel gas, this information establishes a guide to the accuracy of the determination by providing a material balance between these two elements. The per cent sulfur dioxide may then be reliably determined by dividing the partial pressure of this compound by the total pressure of the sample charge. In this manner it is unnecessary to measure and calculate the partial pressures of the other constituents, thereby eliminating several steps. This, of course, applies only when the other constituents are not required and when the normal butane sensitivity has been checked within a reasonable period of time. As it is normal practice to establish the normal butane sensitivity each day during mass-spectrometer operations, these data are always available for sulfur-dioxide determinations by this method.

In order to establish the validity of these methods, it was considered desirable to determine their accuracy and repeatability. To do this a miniature pyrex-glass stack, into which a pyrex sample tube had been sealed, was set up in the laboratory. A measured volume of cracked fuel gas of known composition was burned with a measured



Titration Assembly.

FIG. 2

volume of air or oxygen and carbon dioxide. The mol ratio of the sulfur to carbon was calculated, and the per cent total sulfur was determined by the hydrogen-peroxide method, whereas the per cent sulfur dioxide was determined by the mass-spectrometer method. The results of these determinations are shown in Table 1.

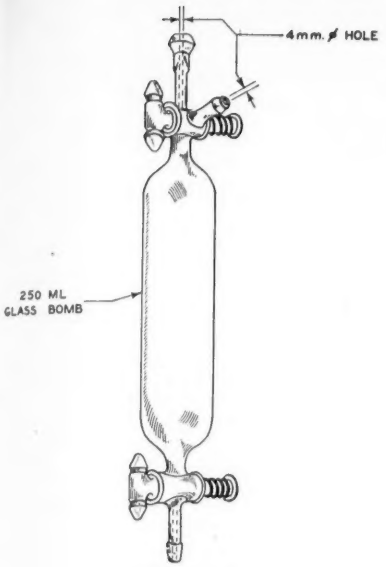
In order further to evaluate the test procedures, a group of synthetic samples composed of sulfur dioxide and air in known percentages was prepared and tested for sulfur dioxide by the two methods. These data are shown in Table 2.

The effect of hydrogen-peroxide concentrations, ranging from 3 to 12 per cent for the total sulfur determination, was studied; and the results shown in Table 3 were obtained.

The per cent total sulfur in a flue gas, as determined by the hydrogen-peroxide method, was compared with that determined by one in which benzidine hydrochloride was used; and, as seen in the following tabulation, good agreement between the two methods was obtained.

	1	2
Per cent total sulfur by benzidine hydrochloride	0.16	0.22
Per cent total sulfur by hydrogen peroxide ...	0.17	0.22

The final criterion of the usefulness and reliability of the method



Sample Bomb.

FIG. 3

is its application to the industrial analytical problem. To establish this fact, the various fuels and stack gases throughout the refinery units are analyzed regularly. Typical results of these determinations are tabulated in Table 4.

Discussion

Air-pollution-control regulations limiting the concentration of sulfur compounds which may be discharged to the atmosphere with stack gases makes it necessary to keep a close check on the amount of this material which is being released during the refining of petroleum. The maximum concentration which is permitted by the Los Angeles County Air Pollutions Control Bureau is 0.2 per cent sulfur, calculated as sulfur dioxide, with a 40-per-cent excess air to fuel ratio. Because of these limitations, it is desirable that analytical procedures be available for the determination of these compounds. From an economical standpoint it is naturally desirable that the procedure be accurate, rapid, and that it require the minimum of equipment. All of these have been achieved with the method for total sulfur by hydrogen peroxide. The time required to make an analysis by this method is less than 30 min, including sampling, travel time to and from the units, and the final titration and calculation. The actual sample time is no greater than 5 min, whereas the titration and calculation requires no more than 5 min, both of which may be further reduced when several determinations are made concurrently.

Although the mass spectrometer can scarcely be classed as a simple and inexpensive apparatus, the utilization of this instrument by many of the refineries throughout the country for other types of gas analyses, make it available to a great many laboratories for the determination of sulfur dioxide and the other constituents of flue gases. It does, however, possess the desired characteristics of speed and accuracy. The time required for this type of analysis is also about 10 min.

As shown previously herein, the combined procedures provide reasonably accurate, reliable, and rapid methods for the analysis of sulfur compounds normally encountered in refinery stack gases. When contrasted with other longer and more tedious methods, these procedures possess worthwhile characteristics.

Summary

The needs for a method by which the total sulfur and sulfur-dioxide content of refinery flue gases can be determined have been met by this procedure in which the total sulfur is determined by the simultaneous oxidation and absorption of sulfur dioxide and coexisting acid gases in a 3-per-cent solution of hydrogen peroxide, whereas the sulfur-dioxide content is determined by mass-spectrometer analysis. Both

(Continued on Page 25)

TABLE 1

	1	2	3	4	5	Average
Sulfur-carbon-ratio in fuel	0.0184	0.0184	0.0184	0.0184	0.0184	....
Sulfur-carbon-ratio in stack	0.0170	0.0172	0.0155	0.0171	0.0154	0.0164
Theoretical per cent sulfur dioxide	0.17	0.16	0.16	0.16	0.17	0.164
Total per cent sulfur by hydrogen peroxide	0.16	0.15	0.15	0.15	0.15	0.152
Per cent sulfur dioxide by mass spectrometer	0.15	0.15	0.14	0.15	0.15	0.148

TABLE 2

	1	2	3	4
Per cent sulfur dioxide, synthetic	0.16	0.16	0.25	0.8
Total per cent sulfur dioxide by hydrogen peroxide	0.16	0.16	0.21	0.8
Per cent sulfur dioxide by mass spectrometer	0.16	0.15	0.25	0.8

TABLE 3

Per Cent Sulfur Dioxide

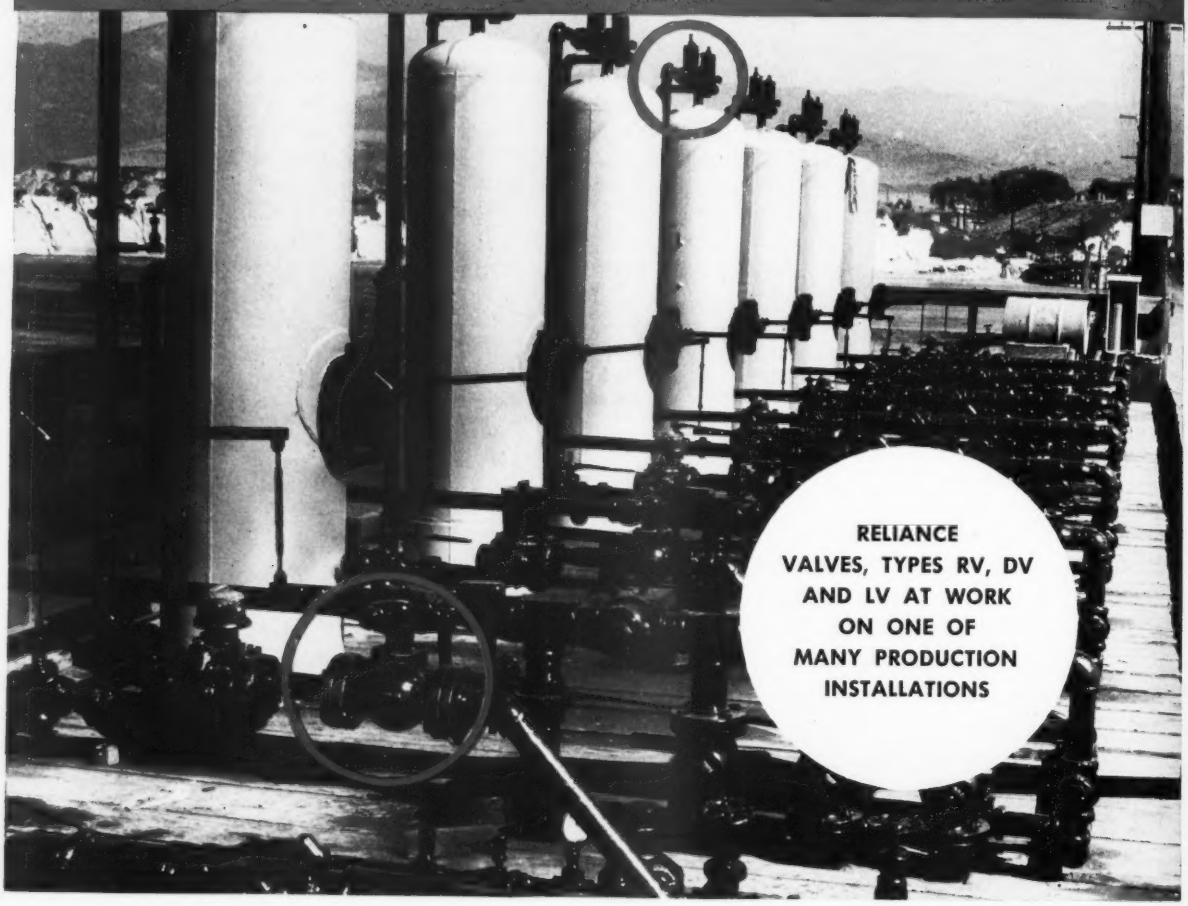
Hydrogen-peroxide Concentration	Run No. 1	Run No. 2	Run No. 3	Run No. 4	Average
3 per cent	0.17	0.15	0.17	0.17	0.165
6 per cent	0.17	0.15	0.18	0.17	0.167
9 per cent	0.16	0.15	0.17	0.17	0.162
12 per cent	0.15	0.18	0.17	0.17	0.167
Average	0.162	0.157	0.172	0.170	0.165

TABLE 4

Source of Sample and Type of Fuel	Sulfur-to-Carbon Ratio	Theoretical Per Cent Sulfur Dioxide	Per Cent Total Sulfur by Hydrogen Peroxide	Per Cent Sulfur Dioxide by Mass Spectrometer	Per Cent Sulfur Trioxide by Difference
No. 1 boiler-house No. 16-heater stack	0.018	0.17	0.16	0.16	None
No. 1 boiler-house No. 16-heater sludge fuel	0.02				
Heat-medium furnace fuel oil	0.004				
Heat-medium furnace stack	0.003	0.04	0.04	0.027	0.013
Battery No. 5, heater No. 2 fuel oil	0.004				
Battery No. 5, heater No. 2 stack	0.004	0.04	0.04	0.04	None
No. 1 boiler-house, No. 2-heater fuel oil	0.004				
No. 1 boiler-house, No. 2-heater stack	0.003	0.05	0.06	0.04	0.02
Steam asphalt, 810-heater fuel gas	0.014				
Steam asphalt, 810-heater stack	0.014	0.08	0.08	0.08	None
Battery No. 1-, No. 3-heater natural gas	0.000				
Battery No. 1-, No. 3-heater stack	0.000	None	None	None	None
No. 81, No. 3-heater (thermal cracked) fuel gas	0.041				
No. 81, No. 3-heater (thermal cracked) stack	0.036	0.30	0.30	0.26	0.04
No. 3 boiler-house No. 12-heater fuel gas	0.008				
No. 3 boiler-house No. 12-heater stack	0.006	0.07	0.07	0.05	0.02
*TCC T-1 DeFlores No. 1 fuel gas	0.018				
*TCC T-1 DeFlores No. 1 stack	0.016	0.12	0.12	0.11	0.01

*Thermofor catalytic cracking.

OIL PRODUCERS CHOOSE *RELIANCE* FOR DEPENDABLE SERVICE



In every major oil field, Reliance Valves are on the job day and night, giving trouble-free, efficient service. Reliance offers THREE outstanding advantages:

(1) SAFETY . . . *by providing positive shut-off of normal or emergency pressures.*

(2) SATISFACTION . . . *by insuring sufficient capacity over working range of valves.*

(3) ECONOMY . . . *can be repaired or replaced in the field.*

Write for bulletin TODAY.

AMERICAN METERS

RELIANCE REGULATOR DIVISION
AMERICAN METER COMPANY
INCORPORATED
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Standard Builds Wax Plant

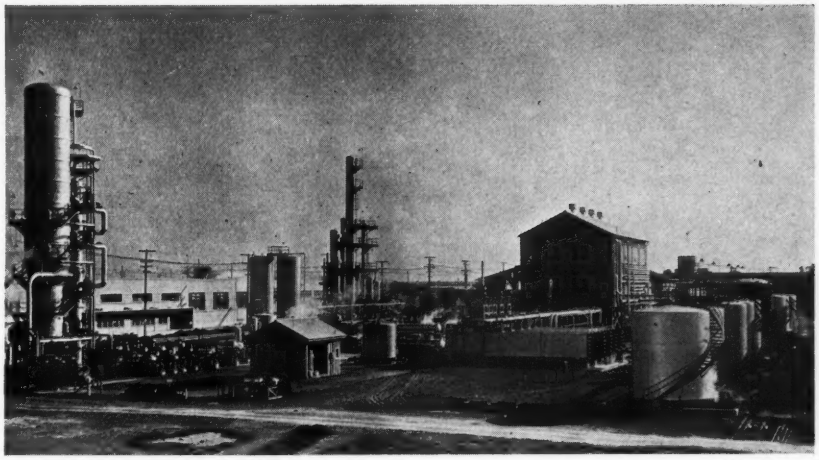
A new, major wax plant for the Pacific Coast and the west is in production at the Richmond Refinery of the Standard Oil Company of California. Capable of manufacturing 45 million pounds of wax a year, the new plant has been under construction since the easing of the equipment and supply situation following the end of the war.

Need for a West Coast wax plant has been indicated since the tremendous growth in the use of wax during and since the war years. The Richmond plant will supply the Pacific and western markets.

The new plant will produce refined wax of high, medium and low melting points from California crude. Shipment from the Richmond refinery is made in 10 pound slabs, 100 pound cartons of slabs and 220 pound bags of slabs. Loose slabs can be shipped in paper lined box cars. Bulk shipments are in steam coil tank cars, direct from the refinery.

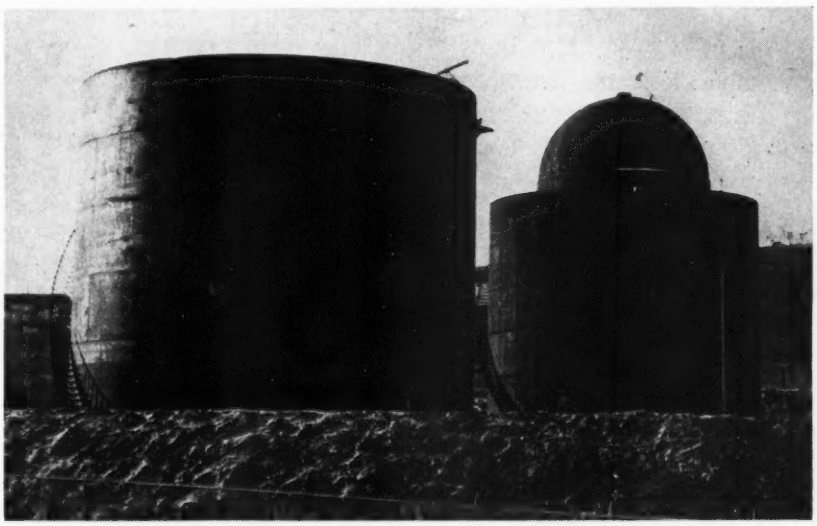
About 29 per cent of production will be of the most pliable, low-melting point grade, 125 to 130 AMP (American melting point, a trade standard) most of which will be used in milk cartons. Around 54 per cent will be of medium melting point for waxed paper, which has an almost endless range of usefulness in industry and food processing and wrapping. Higher melting point wax will be used for specialized purposes.

Uses of wax in modern living are constantly growing. Besides the more familiar tasks of shining shoes, providing candlelight and sealing jams and jellies, petroleum wax is the binding agent in carbon paper; seals cheese, is an essential ingredient of many cosmetics, matches and medicines; waterproofs leather, rope and cordage; insulates electric wires, and waterproofs everything from an awning to a wrapper for dynamite. Wax in the West and on the Pacific Coast has been in short supply during and since the war years, and this new local source is expected to be of primary importance to Western industry. This new supply, it is believed, will also stimulate the establishment of new industries in the West using wax, and encourage the development of further new industrial and manufacturing uses.



Wax Plant of the Standard Oil Company of Calif., which will be major source of supply for Western United States.

The new plant is big, and although the method used is derived from known basic processes, solvent recovery units and their auxiliaries make it relatively complicated. Slack wax, a mixture of various oils and waxes produced as a refined by-product in the manufacture of lubricating oil, is separated into three different melting points by heat. Further steps remove the oil from the wax by chilling, solvent treating and filtering. Final step passes the wax through fine clay, resulting in an end product of semi-translucent whiteness, tasteless and odorless.



A new dome-type storage tank (right) designed to prevent loss of gasoline through evaporation, has been put into operation by Socony-Vacuum Oil Company, Inc., at its plant in Worcester, Mass.

The dome section of the tank contains a flexible diaphragm made of nylon coated with Perbunan rubber and is like the half of a giant rubber ball.

When vapors expand in the tank, as happens to a greater degree in warm weather, the diaphragm expands inside the steel dome and holds the vapors within the tank. When temperatures drop, the diaphragm contracts but air is not drawn into the section where the gasoline is stored. Air is always present between the outer surface of the rubber ball and the metal shell that houses it. The amount of this air comes and goes as the rubber section expands or contracts.

The odd-shaped tank is the first of its kind to be put into operation by Socony-Vacuum and is also the first to be built in the country. It was built by the Chicago Bridge & Iron Co.

Your employees want to help you build security

HERE'S HOW 7,500,000 WORKERS ARE DOING IT

More than 20,000 companies now maintain the Payroll Savings Plan, by which their employees invest in U. S. Savings Bonds automatically every pay day. This Plan builds security not only for the individual employees, but for their companies and for the nation!

As you know, Savings Bonds pay $4 at maturity for every $3 invested. Thus they help create a "rainy-day" fund for each Payroll Saver, increasing *his* security.

How P. S. P. helps employers

America's leading corporations report these *company* benefits from the Payroll Savings Plan: As Bonds increase the worker's economic peace of mind, plant morale improves. Production increases—because absenteeism, labor turnover, and the accident rate all decline. Relations improve between employer and employee.

Savings Bond dollars are dollars removed from the spending stream. They are deferred purchasing power—an assurance of good business during the years to come. The Treasury uses net Savings Bond dollars to help reduce inflationary credit potential in the banking system by retiring short-term bank-held Federal securities. So Bonds increase the *nation's* economic security, too!

Proof that employees want P. S. P.

Practically everybody wants to *save.* Every one of your employees could be saving *more* if he were obtaining Savings Bonds regularly, right where he works. Even with today's high prices, it has been proved that between 40% and 60% of America's working millions—at any wage level—can and will buy Bonds through Payroll Savings *if management sponsors the Plan and if a fellow worker asks them to sign up.*

Yes—your employees want to help you build security—for all of us. It's up to you whether they get the chance. All the help you need is available from your State Director, U. S. Treasury Department, Savings Bonds Division. While it's on your mind, why not call him? Or write the Treasury Department, Washington 25, D. C.

The Treasury Department acknowledges with appreciation the publication of this message by

THE CALIFORNIA OIL WORLD

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and the Advertising Council.

With Drilling Contractors

Fred M. Manning, president of Coastal Drilling Company at Los Angeles, has returned to California from an invigorating vacation trip to Honolulu and other points in the Pacific. Manning, in addition to his West Coast drilling and producing operations, is a leading figure in the production branch of the industry in the Rocky Mountain area.

K. L. Kellogg & Sons has completed Hancock Oil's KCL No. 83-23 in the Gosford area for 430 barrels daily from the Stevens zone. Original bottom is 8223 ft. and plugged-back depth 7880 ft. Kellogg at Long Beach is drilling below 9000 ft. in Hancock's Signal No. 34, venturing for oil in the De Soto zone. Among many other Kellogg jobs is Universal Consolidated's Phillips No. 1 at Newhall. It is being drilled below 1400 ft.

Current contract work of Severns Drilling Company includes Union Oil's Dominguez Estate No. 3 at Dominguez, Naranjal No. 43-2 at Brea-Olinda and Alexander Bell No. 2 in the Santa Fe Springs field.

Dunlap & Graham has been awarded contract to drill L. M. Lockhart's second Arizona well, 30 miles south of Holbrook on the Snowflake Anticline.

Bell & Burden, Inc., is drilling on contract wells in several important areas. Among the contractor's current jobs are Shell Oil's Bryant No. 2-5 at Seal Beach and Reyes No. 146 at Dominguez. Bell & Burden also are drilling Richfield Oil's Sawyer venture in Cuyama Valley and several wells for Continental Oil at Guadalupe and San Miguelito. A. H. Bell and D. H. Burden are officials of the contract organization.

Corwin Drilling Company has completed General Petroleum's Castruccio No. 1 on Sec. 31-4n-15w at Placerita Canyon. It is pumping about 90 barrels daily from 1460 ft.

Brown Drilling Company has been named contractor on Macson Oil Company's Piling No. 1 on Sec. 31-30s-29e in the Edison field.

Gene Reid Drilling Company is ready to spud the Chester Oil Company Mitchell No. 3 in the Kern River field, Sec. 6-29s-26e.

In the Cat Canyon field, Acme Drilling Company is redrilling at 4600 ft. with the Douglas Oil of California Douglas No. 19 on Sec. 22-9n-33w. Original bottom is 6287 ft.

Ivan (Smokey) Seanor, Drilling & Exploration Company at Mendoza, Argentina, has been joined by his wife and son, Terry. Jim Brazil, who joined the Drilexco California organization last June, is now attached to the company's production engineering staff at Hobbs.

One of the most popular men in contract drilling circles is Frank Jones of Stansbury, Inc., at Bakersfield. Jones formerly was secretary of the California chapter of the AAODC. Stansbury is understood to have recently purchased a new Ideco rig, which is performing at Cuyama Valley, where among other of its completions is Richfield's Quality A No. 78-31 for 4000 barrels daily.

Fowler Drilling Company is the contractor on California's most interesting well. It is Boyle Royalties' Taylor No. 1 at First and Lorena streets in metropolitan Los Angeles. The contractor is busy on more than half-a-dozen other jobs in different areas of the state.

Crissman Drilling Company brought to successful completion at 3126 ft. Merchants Petroleum's Bonebrake No. 1 at Sespe. Estimated yield was 250 barrels a day.

T. P. Pike Drilling Company is continuing its successful drilling operations for Basin Oil at Inglewood. Four wells are at different operational stages there.

Discussion at the recent meeting of the California chapter of the AAODC at the Crystal Inn at Bakersfield centered on the management institute course, which the association is inaugurating in this state.

The chief purpose of the course is to bring executives and key men of contract drilling companies up-to-date on tax matters, Federal, state and county laws, problems of concern to all branches of the oil industry and a number of other complex management subjects.

Class instructors will be from the ranks of the country's foremost authorities on management and other phases of business of interest to contractors.

The courses will be held one full day each month for half a year. They will convene at 9 a.m. and adjourn at 6 p.m. Tentative plans of the California chapter call for courses in the Los Angeles-Long Beach district and in Bakersfield.

John Woodruff, petroleum extension coordinator at the University of Texas, recently explained that it is the function of management to develop men whose aggregate talents and abilities will comprise in appropriate balance all those attributes required in the business.

"Management," he added, "must not only have such men in its organization, but it must so deal with them that all their diverse abilities are expended without stint in the common cause."

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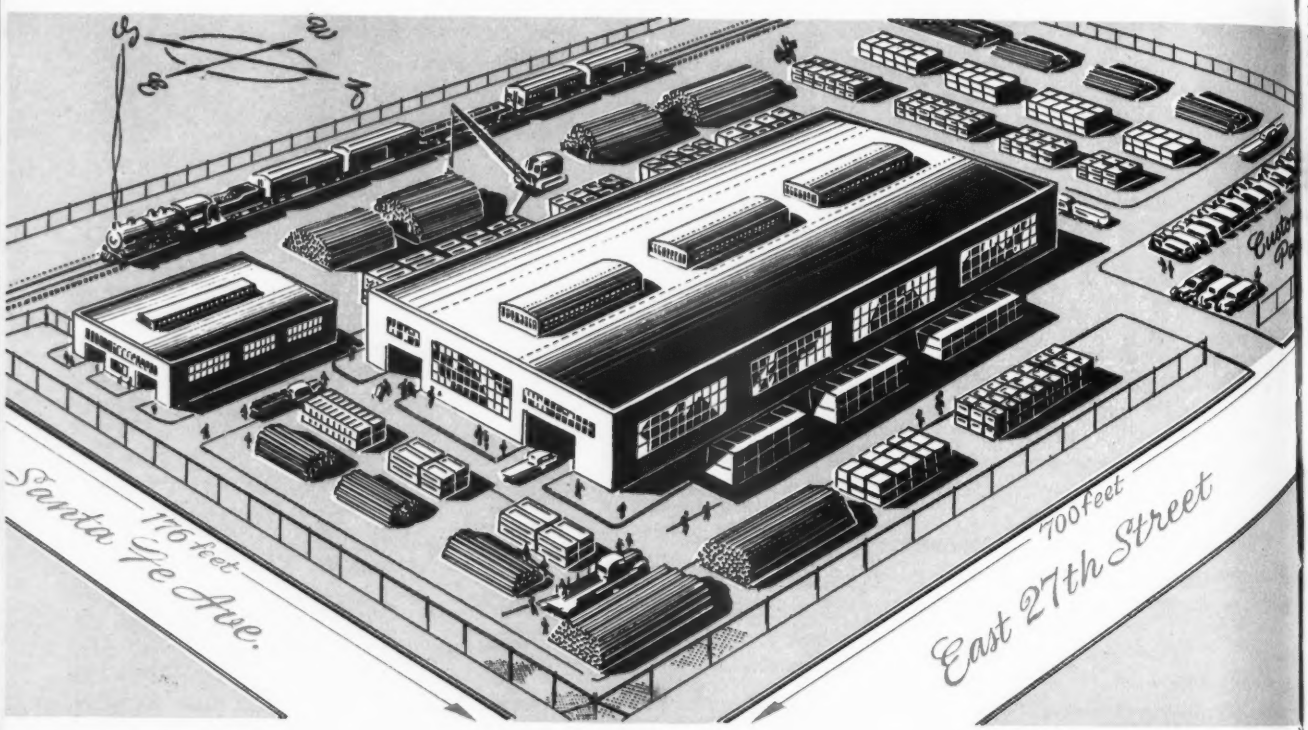
OF WAREHOUSE, STORAGE AND PARKING SPACE...adjacent to our Los Angeles Plant...for the convenience of our Customers



These new facilities are located just east of our main Los Angeles plant on East 27th Street, and will greatly facilitate our service to customers in the Los Angeles area ... Parking for customers is an added feature.

Our new plants in Bakersfield and Tucson have been carefully planned to serve customers in these areas. We wish to thank all of you for helping make this growth possible and we pledge our closest attention to your needs at all times.

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Field Development

PREPARED FROM CALIFORNIA OIL WORLD NEWS SERVICE

Los Angeles Basin

Los Angeles Basin New Operators Drill At Santa Fe

Morrow & Ryan, a comparatively newcomer from Texas, is starting an interesting wildcat well in the Santa Fe Springs area. Drilling will be at the northwest corner of Hawes street and Mills avenue on Sec. 3-3s-11w. The test, which is likely to go to at least 7000 ft. is on 650 acres blocked and leased by Milton L. Kane, manager of Morris Estates Company of San Francisco. Robins Willis is engineer for the company. Morrow & Ryan has substantial producing properties in the Mid-Continent area, where the company currently is operating several strings of tools.

Puente Wildcat Drilling Ahead

One mile southeast of Puente on the old Rowland ranch, Standard of California is drilling below 2000 ft. with its No. 1 wildcat on Sec. 21-2s-10w. Located north of Diamond Bar ranch, the well is near where Shell, Richfield and Texas Company drilled in years past. Western Gulf at one time explored on the Diamond Bar ranch.

San Fernando Test Drilling

Universal Consolidated's Panorama No. 1 wildcat on Sec. 6-2n-15w near San Fernando is drilling at 7263 ft. The company's Phillips No. 1 on Sec. 2-3n-16w at Newhall is drilling at below 1400 ft. No. 2 is a location on the section.

LaSalle Test Ready To Start

Ben Hur Refining Company and Imperial Development have joined forces and are starting an interesting shallow test well on Sec. 10-3s-16w in the LaSalle area, four miles southeast of the Newhall-Potrero field and approximately a mile south of the Newhall townsite area. The well is on a 42-acre parcel.

Cajon Pass Test Drills

Having successfully sidetracked bailer, Cajon Oil Company at last reports was drilling at 2886 ft. with its Ray No. 2 on Sec. 36-2n-6w in the Cajon Pass area of San Bernardino County. Chino Hills Oil's Chino Hills No. 4 on Sec. 33-2s-8w and Grayco Oil's Grayco No. 2 on Sec. 13-3s-8w are temporarily idle at respective depths of 2056 and 4096 ft. George H. Marsh is milling on iron at 1260 ft. in his No. 1 test on Sec. 5-10n-6w in the Mojave desert.

Beach Test On Calendar

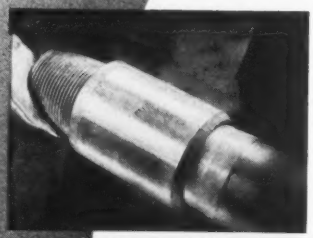
One mile north of production at Huntington Beach in Orange County, Humble Oil & Refining is beginning work on Isenor No. 1 on Sec. 25-5s-11w. McCarthy Oil & Gas at West Newport is drilling and coring ahead below 6150 ft. in No. 32 on Sec. 6-6s-10w. Union Oil's Reyes No. 1 on Sec. 24-3s-9w in the Kraemer area is making hole ahead at 1935 ft. Honolulu Oil's Bryant No. 1 on Sec. 29-3s-8w is drilling at 3455 ft.

The Macco Rig Builders taking down Superior Oil Co. derrick in the Rosecrans Field, rear row, standing left to right: Bruce Stiener, rig builder; C. A. Simon, foreman; E. M. Sivertson, rig builder; M. Mitchell, hoist man; front row seated, left to right: Hillman McKinnon, rig builder; Percy Wilfong, rig builder; Jim Pruett, rig builder, W. P. Kramer, rig builder; Ross Carelton, rig builder.

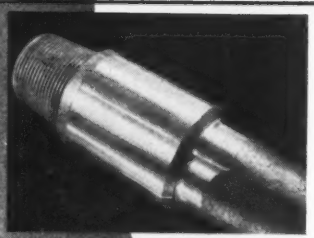
For a reliable fit every time

...use Spang Double Seal Shrink Thread Tool Joints

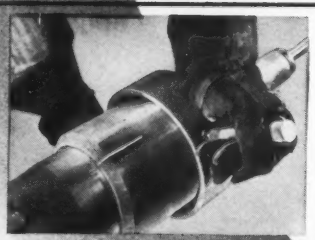
Here's why you can depend on Spang Double Seal Shrink Thread Tool Joints to give you a reliable shrink-fit tool joint connection:



1. Before being shrunk on, every Spang Double Seal Shrink Thread Tool Joint is screwed on the pipe as a gauge to establish its own hand-tight cold position.

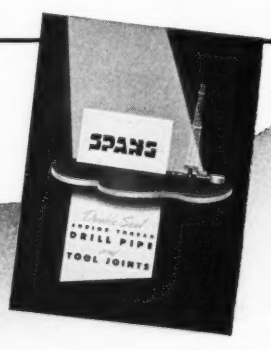


2. After the joint has been expanded by heating, it is advanced an accurately established fraction of a turn beyond this cold position.



3. Because the contact pressure builds up in direct proportion to the amount of make-up beyond this cold position, the final contact pressure between the engaged surfaces can be controlled with extreme accuracy.

For positive insurance against variable contact pressures—for positive protection against creepage and washouts—use Spang Double Seal Shrink Thread Tool Joints and Drill Pipe.



SEND FOR THIS BOOK TODAY

Fully illustrated 16-page booklet, "Spang Double Seal Shrink Thread Drill Pipe and Tool Joints" packed with facts that tell how this product can help you cut drilling costs.

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THE NATIONAL SUPPLY COMPANY NSCO

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THE INDUSTRY'S MOST COMPLETE LINE OF OIL FIELD EQUIPMENT

Gorman Wildcat Stands Inactive

Idle at a depth of 2730 ft. is Pine Canyon Oil Company's Davidson No. 1 wildcat test on Sec. 26-8n-18w near the crest of the Ridge route in the Gorman area of Los Angeles County. The operator has yet to announce the future course of operations in the area.

Newhall Area Adding Dusters

The development campaign at Newhall has recorded several distinct disappointments. L. M. Lockhart's Miller No. 2 on Sec. 2-3n-16w has been abandoned at 6422 ft. All zones cored were evidently barren. R. W. Sherman's Newhall Comm. No. 2-1 on the section has suspended operations at 964 ft. F. E. Fairfield also has suspended operations in Reed-Ulrich No. 1 on Sec. 34-4n-16w. The hole stopped at 3472 ft. Oakes & Combs et al Lutge No. 1 on Sec. 2-3n-16w was given up at 4812 ft. in shale. Based on drilling so far in the area, chances for new production appear best in a direction west and southwest from the Sherman discovery. Ground in this particular sector has yet to be fully tried. On the north edge of the play, Standard of California is drilling below 1500 ft. with its N. L. & F. No. 5-2 on Sec. 34-4n-16w and from all signs the well will go deep for a thorough test.

Three other projects at the present writing are drilling in the area.

Mint Canyon Try At 2518 Ft.

Young Bros.' Rentchler No. 1 prospect job on Sec. 34-5n-16w in the Mint Canyon area has reached 2518 ft., with the operator cogitating as to the next move.

Solemint Try Works

Equipment repairs are being made for Solemint Petroleum Company's Carlisle No. 1 try on Sec. 27-4n-15w in the Solemint area of Los Angeles County.

Castaic Try Goes

Going deeper at 800 ft. is the Carl R. Pohl Associates Pohl-Green No. 1 exploratory hole on Sec. 29-5n-15w near Castaic.

Inglewood Test Spuds

Spudded and drilling ahead near 840 ft. is Shell Oil's Baldwin Hills No. 1 wildcat on Sec. 9-2s-14w in the Crenshaw district of Inglewood. Standard of California has staked location for another well in the Inglewood area. This latest job is Baldwin No. 142 on Sec. 17-2s-14w.

Los Angeles Well Tested

On formation test of the interval of 8394 ft. and bottom at 8407 ft., Richfield Oil's Edison-U. P. Unit No. 1 on Sec. 16-2s-12w in the East Los Angeles area showed 5130 ft. of gassy oil during a 1-hour period. Water shut off is now the subject of trial.

Torrance Try Works

Keystone Consolidated Oil Company's Vaccero No. 3 on Sec. 8-4s-14w in the Torrance area has reached 3400 ft. and is engaged in cleanout operations. Morton & Dolley is beginning Whitelaw No. 2 and No. 3 on Sec. 30-4s-13w.

Newhall-Potrero Project Drilling

General Exploration Company of California continues to drill ahead below 7050 ft. in its Ferguson No. 5 on Sec. 36-4n-17w in the Newhall-Potrero area. Federal Oil's Oakgrove No. 1 on the section is down 1709 ft. and plugging and testing. Barnsdall Oil has completed No. 71-5 on Sec. 26-4n-17w at 9215 ft. for a yield of 572 barrels a day.

Seal Beach Well Flows

In the Seal Beach field, Hellman Estates has completed No. 33 on Sec. 12-5s-12w. Initial yield was 2000 barrels of oil and 103,000 cubic ft. of gas a day from 8791 ft. through a 11.64-in. choke. No. 34 on the section is drilling at 2949 ft. Shell Oil's Bryant No. 2-5 is drilling at 7900 ft. Standard Oil's San Gabriel No. 39 is drilling at below 8950 ft. The latter two wells are on Sec. 3-5s-12w.

Dust is an industrial hazard only as long as workers are without approved respiratory protection. U.S. Bureau of Mines approved McDonald Dustfoe Respirator completely eliminates the dangers of pneumoconiosis-producing dusts and mists. Light, comfortable, serviceable — does not interfere with working freedom.

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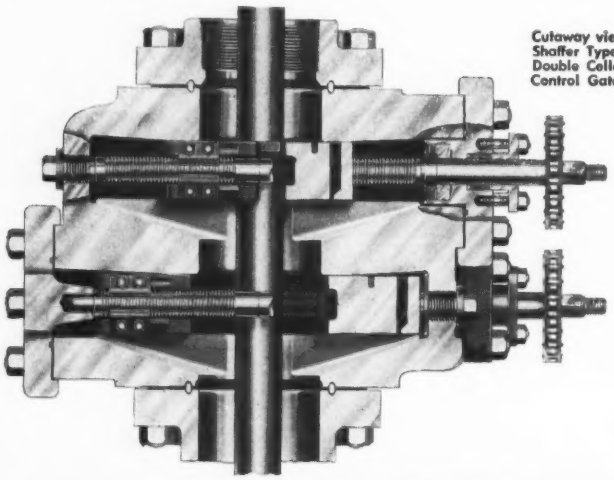
Close it AND IT STAYS CLOSED!

Open it AND IT STAYS OPEN!



Cutaway view of Shaffer Type 45 Double Cellar Control Gate

The rams in a SHAFFER GATE stay wherever they are set...

without locking devices of any kind

WHEN YOUR WELL is protected with Shaffer Cellar Control Gates no secondary operations are needed to make sure the rams stay where they are set. This is a *double* advantage...

When the gate is closed

the rams stay closed *automatically* without need for anyone to go near the gate to "lock" it or for other closing operations. This not only saves vital time in emergencies but also eliminates risk of forgetting any locking operations—*because none are necessary!*

When the gate is open

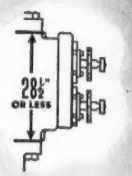
the operation is equally simple. There's nothing to unlock or disengage. You simply open the Gate. And when the rams are in the open position, they *stay* open automatically. No creeping rams to block the hole—no risk of damaging the rams when running bits or tools in or out of the well!

This Shaffer feature of positive ram operation is one more of *so many* vital Shaffer advantages that no operator should fail to get the *complete* Shaffer story before purchasing any cellar control gate equipment. Let us give you further details on the multiple Shaffer Cellar Control Gate advantages, a few of which are highlighted at right.

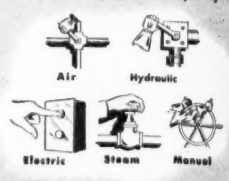
Write for your free copy of the Shaffer Catalog.

See pages 3843 to 3894 of your 1948 Composite Catalog for data on the complete Shaffer line.

YOU GET VITAL ADVANTAGES LIKE THESE IN SHAFFER CELLAR CONTROL GATES!

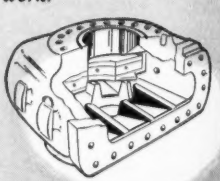


GREATER COMPACTNESS — *cellar saving compactness that permits closer hook-ups, reduces cellar dimensions, saves time and money on every rig installation throughout life of Gate!*



MAXIMUM POWER ADAPTABILITY — *choice of air, hydraulic, steam or electric power drives — plus full manual standby — is yours with Shaffer Gate. All drives are compact, simple, positive, quick!*

EASY RAM CHANGES — *only one end cover need be removed to change both sides of ram assembly. Saves time, saves work!*



MUD FREE OPERATION — *bottoms of Shaffer ram compartments are sloped sharply downward, with rams travelling on high narrow ribs. Mud drains quickly out of Gate — does not interfere with free operation of rams!*

Plus **MANY OTHER VITAL SHAFFER ADVANTAGES. No other cellar control gate has so many important operating features . . . requires so little cellar space . . . is so trouble-free and dependable on all modern drilling programs!**

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San Joaquin Valley

Kettleman Hills Test Drills Ahead

Middle Dome Corporation is drilling ahead at 10,391 ft. with its No. 52-30V on Sec. 30-23s-19e at Kettleman Hills Middle Dome, after testing the Vaqueros in the Lower Miocene from 9850-10,150 ft. The test showed some oil and water in quantity. The present target of the venture is the Eocene sand, expected near 12,000 ft. Standard's S. F. & F. L. No. 4Z-68 on Sec. 4-24s-19e is drilling on down at 9563 ft. The company's S. F. & F. L. No. 4-2 on Sec. 12-25s-19e has reached 12,954 ft. and is retesting water shut off. Casing is cemented at 12,310 ft.

San Emigdio Test Drills

Whitehouse & Wilcox is drilling at 3215 ft. with McMurray No. 46-17 wildcat well on Sec. 17-10n-23w in the San Emigdio area, south of Maricopa. The well is a focal point of interest.

San Benito Test Coring

Regent Oil's Baumgartner No. 1 explorer in Sec. 26-17s-9e near Bitter Water in San Benito County is coring around 3000 ft. The well is on a 21,000-acre block of leases. P. A. Kinard's Kinard No. 1 on Sec. 22-11s-9e near Hollister is temporarily idle at 1200 ft.

Greeley Try Digs

Southwest of the Greeley field, General Petroleum's KCL-Calder No. 38-23 on Sec. 23-29s-25e is drilling at 11,650 ft. East of the field, Standard's KCL No. 12-21 on Sec. 7-29s-26e is packed at 10,533 ft. and on swabbing is showing oil, mud and some gas. The project failed to develop commercial oil in the Eocene, which was topped at 13,352 ft. Total bottom is 13,578 ft.

Carrizo Plains Core Hole Listed

Superior Oil Company has initiated a core hole campaign in the Carrizo Plains area of San Luis Obispo County with Grayson-Owens No. 1 on Sec. 1-31s-18e. This is some 20 miles northwest of the Russell ranch and a like distance west of McKittrick.

Mountain View Well Cores On

Promise is noted in Mohawk Petroleum's Hood No. 10 in Sec. 30-30s-29e in the Mountain View field, which is coring oil sand at 5825 ft. The top of the Santa Margarita oil sand zone was reached at 5785 ft. Some 90 ft. of productive Nichols zone above also was found.

Cuyama Valley Drilling Widens

Humble Oil & Refining Company has staked Eugene N. Wegis et al No. 1 in Sec. 28-9n-25w at the far southeast end of Cuyama Valley. Location is roughly seven miles southwest of the junction of the Ojai-Maricopa and Maricopa-Santa Maria highways and 16 miles southeast of Russell ranch production. Richfield Oil has opened a new pool in the White Rock sector. The find was made with Anderson No. 18-30 on Sec. 30-11n-27w on the west edge of present Cuyama production. Initial flow was at the rate of 1145 barrels of 37.8 gravity oil daily through a half inch orifice. Observers credit the well with having found production on the west side of the White Rock fault, which previously was a factor governing drilling in the area. The well's source of yield is a deep zone approximately 500 ft. below the Diblee zone from which wells in the field presently are producing. Total depth of the well is 3642 ft. Richfield now has half-a-hundred wells in the field. The company has drilled 16 dry holes in the valley. Hancock Oil has completed for an unestimated yield its Wood-Callahan No. 22-25 on Sec. 25-11n-28w. Original bottom is 3610 ft. and plugged depth 3200 ft.

Guijarral Hills Venture Producing

Barnsdall Oil has added another well at Guijarral Hills. It is Dessel No. 42-2-2, which has been finished at 8664 ft. Casing is set at 8653 ft. and top Leda sand placed at 8649 ft. Representative gauge was not immediately available. The company previously finaled Dessel No. 1-2-3 on the section at 8738 ft. for an original flow of 960 barrels of 37.7 gravity oil and 59,000 cubic ft. of gas daily.

San Joaquin Drilling Co., contractors on the Barnsdall Oil Co. R. S. F. 79-5 well in the Newhall field. Left to right: G. W. Newman, derrick; Ray A. Hite, driller; Frank L. Marshall, backup; Ed. Robinson, lead tong and C. A. Wright, cathead.

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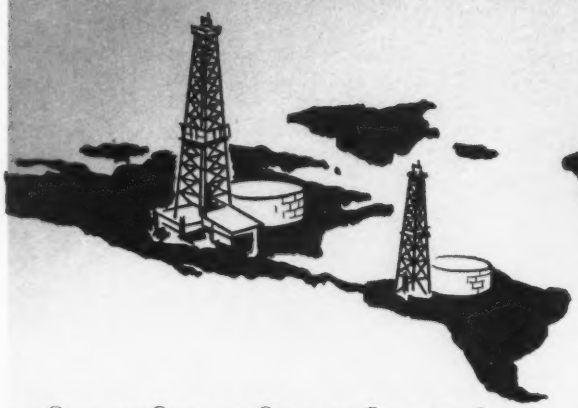

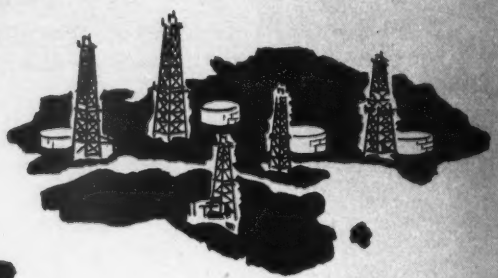

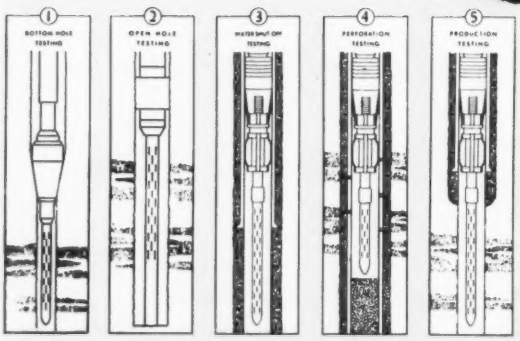

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Antelope Hills Explorer Deeper

In the Antelope Hills at West Belridge, Independent Exploration's Bolton No. 83 prospect well is drilling at 1965 ft. Located on Sec. 27-27s-19e, Independent's leases are surrounded by acreage held by Shell, Richfield and Hancock. At North Mountain View, Independent is drilling at 3450 ft. its Alexis Day No. 2 on Sec. 18-30s-29e. This is the second well on the lease. The first well currently produces 70 barrels of 24 gravity oil daily from 3600 ft.

Mojave Try Digs

In the Mojave area of Kern County, Paul Beamer is prospecting at 1100 ft. in his No. 1 exploratory hole on Sec. 20-32s-36e.

Gould Hills Try Fishing

McCarthy Oil & Gas Company's Richardson No. 46 in Sec. 7-29s-21e at Gould Hills in Kern County has reached 6441 ft. and fishing for drill pipe. Top of fish is at 3140 ft. The well is about two miles north of the Cymric field. It is on the 1000-acre Richardson lease. A half interest in the lease was assigned to McCarthy by Independent Exploration. McCarthy is the operator under terms of an agreement between the two companies.

Buttonwillow Test Drilling

Standard of California at last reports was making progress with drill at a depth approximating 8200 ft. in No. 27-6 test on Sec. 5-28s-23e in the Buttonwillow area. One mile north of the town of McKittrick, Standard is starting Spreckles No. 45-16Z on Sec. 16-30s-22e. Van Sicklen No. 45 wildcat on Sec. 36-27s-21e in the Lost Hills area is undergoing conventional trials. Total depth is 12,181 ft., with casing set at 12,179 ft.

Edison Test Drills Ahead

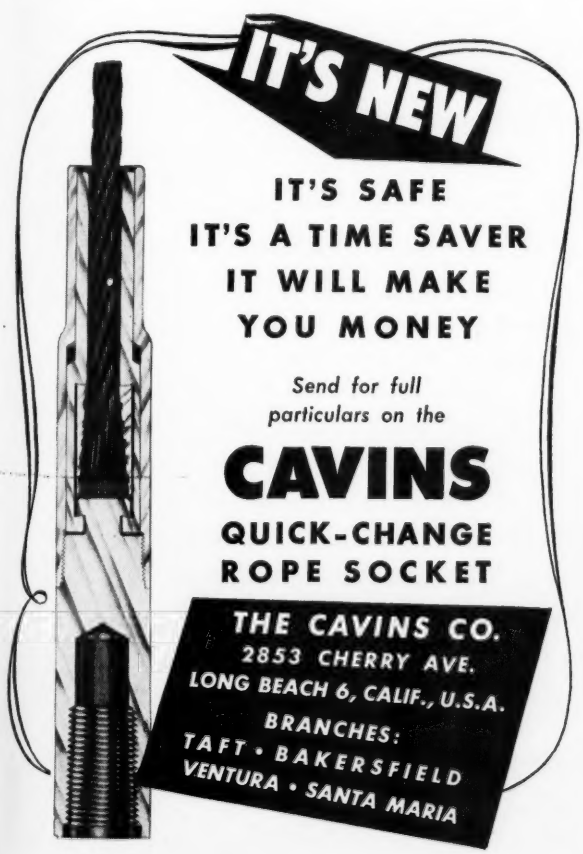
At West Edison, Signal Oil & Gas Company is drilling at 3116 ft. with Signal-Del Papa No. 1, Sec. 2-30s-28e. Morris & Rothschild is commencing operations in Brandt No. 1, Sec. 22-30s-29e. First National Finance Corporation's DeMille No. 2, Sec. 17-30s-29e, has been finaled at 3602 ft. It came in for 250 barrels of 25 gravity oil a day. The company is completing the building of a 2000-ft. line and a battery of new tanks to handle increasing production.

Raisin City Well Gives Up

At Raisin City, Sec. 24-15s-17e, Fresno County, L. M. Lockhart has quit his Ripperdan No. 2-24 at 6405 ft. No showings of importance were encountered.

San Joaquin Well Finaled

In the San Joaquin area, Pacific Western has given the final touch to its Waechter No. 12-X on Sec. 32-15s-17e. The well was brought in from 7074 ft. for a satisfactory yield. Casing was set at on bottom.



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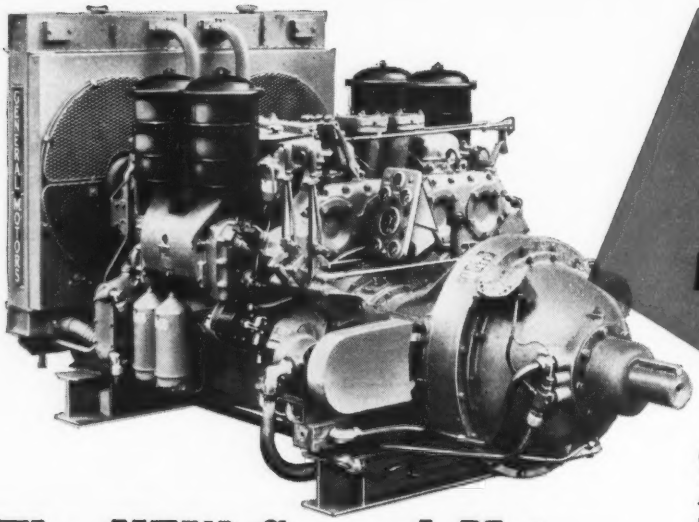

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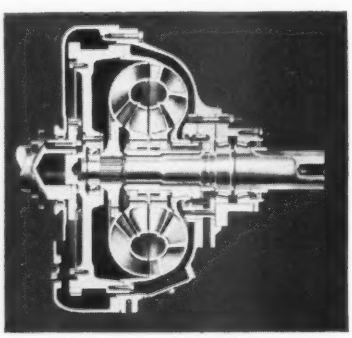

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Tejon Hills Wells Staked

Tejon Hills Oil Company has on the calendar two new drilling jobs in the Tejon Hills area. They are Tejon Hills No. 10 and No. 11 in Sec. 25-12n-19w. Rainbow Oil's No. 3 in Sec. 34-12n-18w quit at 1340 ft. in granite.

Jasmine Try Digs

Morton & Sons' No. 1-16 wildcat at Jasmine, Sec. 16-25s-27e, is drilling at 2406 ft. The venture is on the Quinn ranch. R. S. Bolling's Quinn No. 3, Sec. 15-27s-27e, is engaged in cleanout operations.

Edgar Dome Test Digs

On the Edgar Anticline in San Luis Obispo County, Texas Company's NCT-1 No. 1 in Sec. 12-32s-19e is drilling at 913 ft. Location is not far from a wildcat sunk by E. G. Lewis in 1925. It was credited with oil showings.

Premier Well Pumps

Independent Exploration has finished on the pump its Conoco No. 92 in Sec. 33-27s-27e in the Premier area. Total depth is 2397 ft., with 59 ft. of zone open to production. Casing is cemented at 2338 ft. and a liner was run to bottom. Independent shares interest in the lease of 320 acres with Oceanic Oil. A continued development program is planned for the property, which now embraces 11 producing wells.

Arvin Test Progresses

Near Arvin in Kern County, British-American Oil Producing is drilling deeper at 7432 ft. with Arvin B No. 46A-26 on Sec. 26-31s-29e. Siltstone and oil sand are in evidence at present level.

Rosedale Well Cores

Union Oil's KCL No. 82-12 at Rosedale is coring below 4450 ft. Drill stie falls in Sec. 12-29s-26e, Kern County.

Gosford Adds Producing Well

Hancock Oil Company has completed its KCL No. 83-23 on Sec. 23-30s-26e in the Gosford area of Kern County. The company's second completion in the area, the well came in at the rate of 430 barrels daily from the Stevens zone. Total bottom is 8223 ft. and plugged depth 7880 ft. The well evidently is higher on structure than the discovery hole. Some small fingers of the Stevens zone were apparently cored below the regular formation. Hancock, meantime, has spudded and is drilling ahead in its third well, KCL No. 74-23, some 950 ft. west and south from the discovery. On a lease adjoining, Superior Oil Company is completing its Pitts No. 14-24 on Sec. 24-30s-26e. Casing has been run to set at a point above oil sand topped at 7825 ft. Total depth is 8211 ft.

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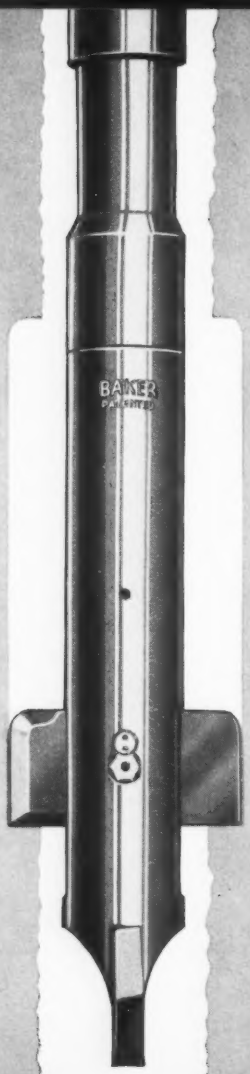

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THE BAKER ROTARY WALL SCRAPER is extremely versatile and is successfully and economically used for many worthwhile applications, a few of which are shown below. It will pay you to learn all about the Baker Rotary Wall Scraper (Product No. 500-D) from your BAKER (or Composite) CATALOG, or better yet, ask the Baker representative in your area for helpful suggestions as to how this efficient tool will fit right into your drilling program.

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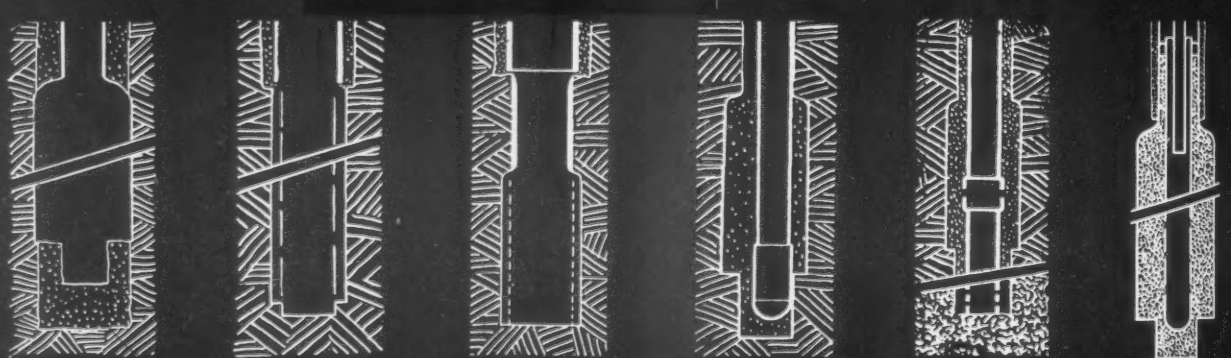

Fig. 1 Fig. 2 Fig. 3 Fig. 4 Fig. 5 Fig. 6

These typical uses illustrate a few of the many worthwhile applications of the Baker Rotary Wall Scraper.

Figure 1—WATER SHUT-OFF TESTS are made after rat-holing below the shoe, "wall scraping" for a vertical distance of 5 feet or more to the gauge of the original hole (or slightly beyond). Figure 2—ENLARGING HOLE TO SET CASING OR LINER with maximum ease and safety. Figure 3—REMOVING MUD SHEATH from the face of the formation to permit cement to bond with original formation. This same procedure is used to scrape the face of the oil sand to increase production. Figure 4—BOTTLENECKING to insure complete encasement of the shoe joint with cement; also to minimize hazard of channeling at this vital point. Figure 5—ENLARGING HOLE FOR C.P. JOB—showing "bottlenecked" section with casing or liner serving as water string above, and oil string below, the cementing point. Figure 6—GRAVEL PACKING is easily and effectively performed when the hole has been enlarged with a Baker Rotary Wall Scraper.

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San Ardo Develops

Approximately three-quarters of a mile northwest of Jergins-North American production on the Ferrini lease, Texas Company has spudded Rosenberg NCT- No. 7 in Sec. 2-23s-10e in the San Ardo area of Monterey County. Superior Oil is beginning a northwest extension test a half mile from Jergins and North American development. The well is tagged Orradre No. 1 on the southwest quarter of Sec. 6-23s-11E. In the Peachtree Bow area, Texaco's California Land & Cattle Company No. 1 wildcat in Sec. 25-30s-11E is drilling at 4690 ft. No. 2 is grading ground. Standard of California is about to spud its No. 1 test in Sec. 25-24s-14e in the Cholame area.

Los Alamos Try Prospects

Seaboard Oil is drilling at 3275 ft. with Barham No. 4 test in Sec. 12-7n-32w in the Alamos area in Santa Barbara County. Protection string was set at 2352 ft. Location is on a substantial block of leases on the Rancho de Quati. Pacific Western's Archambeault No. 1 in Sec. 8-7n-32w is ready to spud.

Paso Robles Venture Quits

Abandonment at 4182 ft. was the final outcome of Barnsdall Oil's Harper No. 1 wildcat in Sec. 1-27s-12e on a 4000-acre lease, three miles southeast of Paso Robles, San Luis Obispo County.

New World's Depth Record

Superior Oil Company is drilling at 18,850 ft. with its Limoneria No. 1 test on Sec. 9-2n-22w at North Montalvo, a new world's record for depth. The company held the former world's depth record with its Weller No. 1 in Caddo County, Okla., which went to 17,823 ft. Standard of California at West Montalvo more recently drilled its Maxwell No. 1 to 17,696 ft.

Fillmore Try Quits

Fairview Exploration Company has pulled out of its Edwards No. 3 near Fillmore in Sec. 27-4n-19w. Drilling stopped at 1633 ft.

Simi Test Drills On

At Simi in Ventura County, R. E. Havenstrite's Tapo No. 1 wildcat is drilling at 3990 ft. Sespe was topped at 1922 ft.

Rincon Try Fishes

McCarthy Oil & Gas Corporation is fishing for drill pipe stuck at 727 ft. in its Hobson No. 1 test in Sec. 5-3n-24w in the Rincon area, Ventura County. Exploration is on a block of leases geologized and leased by Independent Exploration. McCarthy has a 50 per cent interest in the lease.

Sonoma County Wildcat Slated

E. T. Willard, Trustee, San Francisco, has staked location for Talmorini No. 3 in the Petaluma area in Sec. 14-5n-7w, Sonoma County.

Tar Springs Test Active

Tar Spring Ranch No. 1 test, sponsored by H. F. Gibson in Sec. 14-32s-14e at Tar Springs in San Luis Obispo County, is making headway with the drill at 982 ft.

Santa Rosa Well Drills

On Santa Rosa Island offshore Santa Barbara, Signal Oil & Gas is investigating with the drill below 3750 ft. in its current wildcat there. Two prior tests were dry.

Point Mugu Wildcat Spuds

About to take the first bite out of the ground is Mugu Oil Company's Mischler No. 2 on Sec. 36-1n-22w at Point Mugu in Ventura County. It is one mile south of the abandoned Mischler No. 1. The earlier test went to 1552 ft.

Fieldbrook Try Listed

G. L. Speir is ready to spud a wildcat well in Sec. 26-7n-1e in the Fieldbrook area, six miles northwest of the Dixon gas field in Solano County.

Stansbury Drilling Co., contractors on Richfield Quality 66-31 well in the Cuyama field. Left to right: E. R. McNeil, derrick; L. L. Norwood, lead tong; F. F. Pascoe, rotary helper; Tony Arros, driller and F. Kees, pusher.

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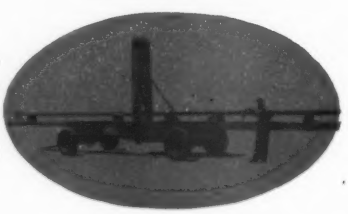

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Willows Try Digs

Drilling has reached 7430 ft. in Shell Oil's James No. 1 prospect well in Sec. 1-19n-5w at Willows in Glenn County.

Tompkins Hills Wildcat Working

In Humboldt County in the Tompkins Hills area, Texaco is drilling at 3155 ft. with Holmes-Eureka No. 4 in Sec. 23-3n-1w. Paul F. Snyder's No. 1 on the Etten ranch in Sec. 36-2s-1w is drilling below 1950 ft. in oil stained sand.

Marin County Wildcat Deeper

Drilling is proceeding steadily ahead at a depth of 6907 ft. in L. M. Lockhart's R.C.A. No 3-1 wildcat in the Bolinas sector of Marin County. The operator is understood ready to launch a second test in Arizona in the Snowflake area. The well will be known as Aztec Land & Cattle Company No. 1 in Sec. 33-14n-20e. The first test, Babbitt No. 1 on Sec. 21-27n-9e was abandoned in basement at 3623 ft.

Chatsworth Project Idle

Word from Chatsworth indicated that Regent Oil Company's Runkle No. 1 wildcat in Sec. 14-2n-18w was temporarily idle at 1578 ft.

Goleta Try Quits

Jasper Petroleum Company has abandoned Thomas B. Bishop No. 1 in Sec. 31-5n-28w in the Goleta area. Originally given up by Ohio Oil Company at 3241 ft., Jasper Petroleum took over the project and carried it on a redrill to 2593 ft. It pumped at the rate of 100 barrels a day of mostly all water.

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Bardsdale Well Flows

Flowing initially at the rate of 202 barrels a day through a 16/64-inch bean, San Marino Oil Company has finaled Capital Crude No. 9 in Sec. 7-3n-19w in the Bardsdale field.

Edna Well Rigging Up

Oil Well Abandonment Company is rigging to deepen from present depth of 883 ft. its R. E. Jacks No. 1 at Edna in Sec. 32-21s-13e. C. W. Colegrove's Pricco No. 56-5 in Sec. 5-32s-13e is coring at 3900 ft.

Santa Paula Wells Grading

Two wells are grading ground at Santa Paula Creek. They are Otto Ellsworth Analuf No. 1, Sec. 21-4n-21w, and Martin Exploration Company's Seaport No. 1, Sec. 22-4n-21w.

Rio Vista Try Starts

D. D. Feldman is starting Gardiner No. 2 on Sec. 26-4n-3e in the Rio Vista gas area. Amerada Petroleum's McCormick No. 4 on Sec. 36-4n-2e is sidetracking drill pipe at 10,954 ft.

Santa Barbara Project Working

Cleanout operations are in progress on Trans-Oceanic Oil Company's M'Divani No. 8 in Sec. 28-4n-27w on the Santa Barbara Mesa. The hole is down 8183 ft.

Ojai Try Spudding

Humble Oil & Refining's Hammond No. 1 in Sec. 18-4n-22w at Ojai is in the spudding stage. Elevation is 1435 ft.

Del Valle Drill Site

Drilling has reached 3121 ft. in Jack Herley and Paul L. Kelley's Handy No. 5 on Sec. 18-4n-17w in the Del Valle field. The R. E. Havenstrite, operator, Barnes No. 9 on Sec. 16-4n-17w is fishing drill pipe, of which top is at 3624 ft. Present depth of the hole is 9503 ft.

SEVERNS DRILLING CO.

Montebello Adds Drill

Another drill job is starting in the Montebello field. It is Kern Oil Company's Monterey No. 46 on Sec. 2-2s-12w. Rothschild Oil's Wheeler No. 6 on the section is idle at 4091 ft.

Aliso Canyon Well Calendared

On the calendar at Aliso Canyon is Standard of California's Del Aliso No. 1-4 on Sec. 29-3n-16w in the Aliso Canyon field. No. 1-3 came in recently from 8380 ft. for 70 barrels daily.

Stack-Gas Analysis

(continued from page 7)

possess the desirable features of extreme rapidity, accuracy, and the minimum amount of sample.

*T-Z 120-deg. stopcock=trademark of a patented stopcock.

Paper delivered at recent meeting of API.

ACKNOWLEDGMENT

The author is greatly indebted to Messrs. Dean Hoggan and Orland Eastin, without whose very capable assistance the method and results could not have been achieved.

Mac C. Wallgren of Washington has been appointed chairman of the National Security Resources Board. Presidential Assistant John R. Steelman has been acting as head of the board since the resignation some months ago of Arthur G. Hill. Wallgren, a one-time colleague of President Truman in the Senate, will receive $14,000 a year in the new post.

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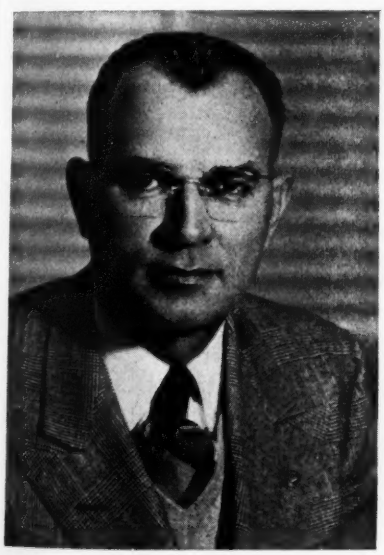
Personalities IN THE NEWS

Fluor Announces New Officers

The Board of Directors of the Fluor Corporation, Ltd., Los Angeles, recently announced its officers for 1949. Shirley E. Meserve, general counsel for the Company since 1929 and its president since 1947, was elected chairman of the board. Mr. Meserve, well known in legal circles as the senior partner of the law firm of Meserve, Mumper and Hughes, was made president of the Company immediately after the death of P. E. Fluor, and has capably directed its affairs since that time.



D. W. Darnell

Succeeding Mr. Meserve as president is Donald W. Darnell. Mr. Darnell, who joined Fluor in 1925 as an engineer, has worked up through the ranks, serving in the following capacities: chief engineer, vice president, and since 1947, as vice president and general manager. Mr. Darnell's long-time association with members of the petroleum industry has gained him an enviable standing in that field.

J. S. Fluor, Jr.

Of further interest to the industry was the announcement of the return of J. S. Fluor, Jr. Mr. Fluor, actively connected with the development and management of the Fluor Corporation since 1921, has been away from the Company since 1946. Mr. Fluor, elected to the position of executive vice president, was induced to return to lend his abilities, experience and guidance to the Company's affairs.

A reorganization of the Company into two major divisions necessitated other management shifts. W. Earl Dunn, formerly executive vice president, was named vice president and general manager of the engineering and construction division, and J. Robert Fluor, formerly vice president and assistant general manager, was appointed vice president and general manager of the manufacturing division.

The other officials will remain the same. They are James P. Wiseman, vice president and director of sales; Francis E. Fischer, secretary and treasurer; and Park C. Shelley, assistant secretary. The Board of Directors is now composed of the Messrs. Meserve, Darnell, J. S. Fluor, Jr., Dunn, J. R. Fluor, Wiseman, Fischer, W. P. Downey, and F. M. Stephens.

To assist the president in the formulating of policies and the conducting of other matters, an Executive Committee has been created. The members of this committee are Messrs. Meserve, Darnell, J. S. Fluor, Jr., Dunn, J. R. Fluor, Fischer, and John F. Gardner, director of industrial relations.

Mr. H. O. Woodruff has been appointed Assistant Division Manager, Producing Department, Pacific Coast Division of The Texas Company, as announced by James T. Wood, Jr., Division Manager.

Woodruff is a native Californian and graduated in 1933 from the University of Southern California in Petroleum Engineering. Shortly thereafter he entered the service of The Texas Company as a roustabout in the Ventura District, and later gained field experience in drilling operations at Eureka, California.

In 1937 Woodruff was transferred to Signal Hill as Assistant Petroleum Engineer, and in 1939 he became Development Engineer at Coalinga. In 1942 he was made District Engineer, Los Angeles Basin District.

He served as Acting Division Engineer for several months during 1946 and was transferred to Los Angeles to serve in that capacity again in October 1947. In 1948 he was named Assistant to Division Manager.

Woodruff has been active on Committees of the American Petroleum Institute, serving as Chairman of the Los Angeles Basin Chapter during 1948.

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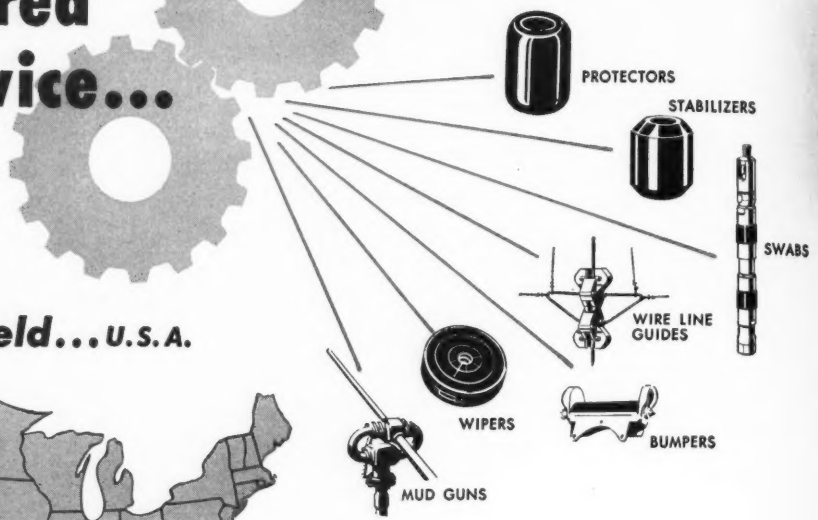

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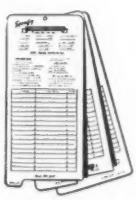

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Bowen Appoints James Wilcox Manager of Stores, Expands Rocky Mountain Services

Paul Bowen, President of Bowen Fishing Tool Company, announces the appointment of James B. Wilcox as assistant manager of stores.

According to Paul Bowen this move is in keeping with Bowen's policy of continually increasing customer service to meet the growing needs of the oil industry. The first step in Bowen's expansion program has been to provide more men, more rolling stock, and a full line of tools for Rocky Mountain oil operators. James Wilcox is currently in charge of operations at Casper, Wyoming, where Omer C. Rogers is Store Manager, and Ross E. Norton is Serviceman. Wilcox's new position will later take him throughout the West in supervising the activities of all Bowen stores.

James has a good oil field background and has been associated with the Bowen Fishing Tool Company and S. R. Bowen Company for a number of years. Following the war when he was a paratrooper, he graduated from Pomona College, where he played football.

Promotion Announced by Bethlehem

Bethlehem Pacific Coast Steel Corporation, thru W. J. McClung, operating vice president, has announced that effective February 1, R. J. Tremblay was appointed General Superintendent of the company's steel plant located in Los Angeles. Mr. Tremblay, as general superintendent, will have charge of all steelmaking processes and manufacturing units at that plant. Since July 15, 1947, he has been assistant general superintendent at Los Angeles, having been appointed to that position from Bethlehem Pacific's Seattle operation.

Coincident with the announcement covering Mr. Tremblay's appointment, Bethlehem Pacific also announced selection of Hubert C. Swett as assistant general superintendent. Mr. Swett comes to Los Angeles from the company's South San Francisco plant, where he has been employed since 1924 and has held the position of engineer of tests since 1943.

Lane-Wells Promotes Two Field Men to Sales

Pacific Coast Division of Lane-Wells promoted two experienced field service men to its sales staff on February 1st, to aid California oil men with their production programs in 1949.

Mr. Frank Webb will work with oil-field operators in the Los Angeles area. Mr. Webb has been with Lane-Wells since 1937 in the position of field operator. Prior to 1937 he was with Alexander Anderson Inc., engaged in sub-surface surveys and directional drilling; before then he was in the drilling and production department of Signal Petroleum Company.

Mr. Cliff Jarrett will work with oil-field operators in the Bakersfield area. Mr. Jarrett joined Lane-Wells in 1938, following his graduation from the University of California that year. He was engaged in field, shop and service activities for the company until 1942, when he entered the Army Signal Corps. He returned to the company in October, 1947, as Electrolog Operator in the Los Angeles area, later he became Operator-in-Charge of the Lane-Wells activities in Santa Maria, California.

Both men have broad practical oil field experience and theoretical knowledge to assist oil field operators with the proper application of gun perforating, electric logging, radioactivity well-logging, and the advantageous use of packers and drillable bridging plugs.

Mr. H. John Eastman, president of the Eastman Oil Well Survey Company, sustained a compound fracture of his left leg just above the ankle when he slipped and fell at his Overlook Ranch, near Denver, Colorado, on January 30th.

At present he is recuperating at the Lamb Memorial Hospital in Denver.

Baker Promotes Fobes and Thorne

Baker Oil Tools, Inc. announces the appointment of F. S. (Bud) Fobes as Assistant Sales Manager, Western Division. Fobes has been associated with Baker since 1940, with time out for four years with the U. S. Navy, as Lieutenant, and has a host of friends in oil fields and offices in California, Gulf Coast and Mid-Continent areas.

F. S. (Bud) Fobes

Frank A. Thorne

Succeeding Fobes as Director of Advertising and Publicity is Frank A. Thorne, who has been connected with Baker Oil Tools, Inc. since November, 1947. Thorne is well qualified to tell the "Baker Story" by experience of two years with Webster Training Service as a staff writer, and ten years as Director of Public Relations and Employee Relations for U. S. Engineers Department at various California locations.

J. G. Gilbert, Head Draftsman, Producing Department, Pacific Coast Division of the Texas Company, has been appointed Assistant to Division Geologist, as announced by James T. Wood, Jr., Division Manager. V. I. Coppard succeeds Mr. Gilbert as Head Draftsman.

Gilbert was born in Iowa; started with the company in 1929 as Junior Draftsman.

Coppard was born in Texas; started with the company in 1935 as Draftsman. Entered military service in World War II as First Lieutenant in 1941 and was discharged as Lieut. Colonel in 1946.

On the Southern California desert for a few days recently was Rush M. Blodget, long a California oil leader. His sojourn was prompted by a cold, which he was having some trouble in breaking up.

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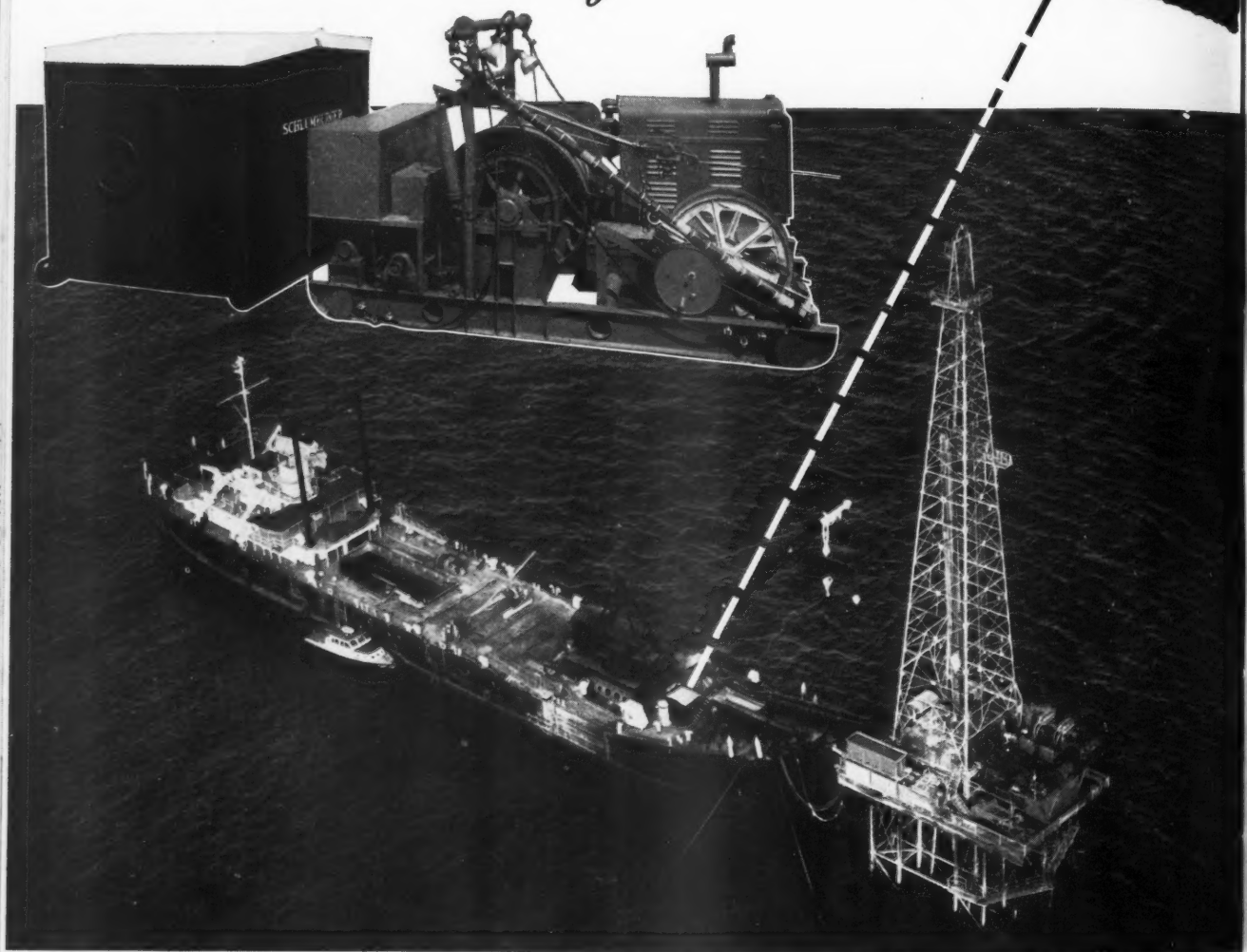

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Wiegand and Schlarb Advance at Chiksan

Following the appointment of G. R. Winder as vice president and sales manager of Chiksan Company, announced recently, Frank Wiegand and Joe Schlarb have been named as assistant sales managers, effective immediately. Frank Wiegand will be stationed at Bakersfield, as in the past. Joe Schlarb will work from the Company's headquarters at Brea. Both are widely known throughout this area, Wiegand having been with Chiksan for 10 years and Schlarb for over 4 years.

Frank Wiegand

These appointments have been made, according to G. R. Winder, in order to materially increase the scope of Chiksan service to users throughout the petroleum and other industries. Wiegand and Schlarb, as assistant sales managers, will provide for closer supervision for an expanding sales force. These appointments are in line with the comprehensive sales and service program now under way at Chiksan.

Joe Schlarb

Fred Goodstein, owner of the Trigood Oil Company of Casper, Wyo., stopped for several days in Los Angeles on his way to Honolulu. New additions to the Trigood staff included R. W. Robbins, geologist, and H. B. Gernert. The company's drilling operations now extend to California, Wyoming, Texas, Colorado, Oklahoma and Montana.

While a patient some years ago in the San Fernando Veterans Hospital, Thomas White, well puller for Shell Oil in Southern California, developed an unique hobby, which has brought him considerable acclaim. He has won particular honor at county fairs for his display of a handbag, made of unborn calfskin and lined with suede, and a hand-carved leather billfold.

Ben Moyle, veteran Los Angeles Basin oil producer, has been elected president of the Signal Hill Businessmen's Association for the ensuing year. Spencer Best was elected vice president and Miss Eleanor La Vittee was named secretary. Those appointed to the board of directors included Frank Dillon, John Hauser, Richard Whittington, Jack Reynolds, Worth Randolph, Kenneth Mills and Walter Schoenberger.

Charles K. Slack, treasurer of General Petroleum, was speaker at the dinner meeting of the Petroleum Accountants Society in Los Angeles. His subject was "Taxation Phases of Joint Operating Agreements."

Bob Saunder became secretary to assistant manager W. F. Paul when Syd Sloan took over secretarial duties for vice president Torrey H. Webb of the Texas Company.

Standard Announces Advances in Production Dept.

Appointment of C. W. Dawson as Chief Engineer of its Producing Department has been announced by Standard Oil Company of California. The position was made vacant by the death of H. B. Davis recently.

C. W. Dawson

Mr. Dawson has been with Standard since June, 1929, after being graduated from Stanford University with an A. B. degree in mechanical engineering. His first job with the company was as an engineer in the Maintenance and Construction division at Kettleman Hills. He has held various engineering positions in the field since that time, transferring to his newest assignment from a position as District Org. and Cost Control Supervisor at Taft.

Announced at the same time are the appointments of V. L. Taylor as Field Superintendent, Coalinga Area, Producing Department, and R. W. Norton as Assistant to the General Manager (Operations), Producing Department, San Francisco office. Mr. Norton succeeds Mr. Taylor in the latter position.

Taylor has been with the company since May, 1935, starting as a petroleum engineer (Development) in the Southern California oil fields. He was graduated from University of California in 1935, with a B. S. degree in petroleum engineering.

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Norton is also a graduate of University of California in 1935, with a B. S. degree in petroleum engineering. He joined Standard in May that year in the southern part of the State. Since that time he has held positions as District Petroleum Engineer and Acting Superintendent for the parent company and subsidiaries in Canada, Petroleum Engineer (Development), northern district, and senior Petroleum Engineer (Development), in the San Francisco office.

Howard Supply Company Establishes Export Division

F. J. "Ole" Olson has been appointed General Manager of the newly formed Export Division of the Howard Supply Company according to an announcement of the company.

F. J. Olson

A long time friend of many of the executives in the Howard organization, Olson was formerly Vice President of Cardwell Manufacturing Company in charge of California sales and later in charge of export sales in New York. During the war, he spent considerable time in Washington in the interest of his company on war work. He was in charge of the export sales for International Derrick & Equipment Company at New York until recently when he tendered his resignation with that company.

Export offices are being set up at 5125 Santa Fe Avenue, Los Angeles; 230 Madison Street, Oakland; and at 30 Rockefeller Plaza, New York City. The company is already representing several manufacturers in the exporting field—including Ynchausti Manila Cordage, Wickwire Wire Rope, Bender masts and derricks, Pacific portable steel buildings, Dragon Bar Stock valves and other lines which will be announced later.

The Howard Supply Company was established in September of 1937 for the purpose of distributing Republic Steel Tubular products and other oilfield supplies in the state of California. Republic disposed of its stock interest, however in April of 1948. The Howard Supply Company is one of the largest of its kind in California and has experienced phenomenal growth. In addition to its main office and warehouse in Los Angeles, the company maintains a pipe yard at Los Angeles Harbor and eleven branches throughout the state.

Fred B. Simms, Shell Oil retired pipeline manager, is one of the new advisory directors of the Kern County Chamber of Commerce. He makes his home on his cattle ranch near Weldon. He is active in many civic affairs.

Still another aeronautical honor has come to Ernest (Pick) McIver of Shell Oil's pipeline division in the Los Angeles office. He has been elected to his second term as a director of the Southern California chapter, National Aeronautic Association. He also is vice chairman of the aviation committee of the Long Beach Chamber of Commerce. Pick previously served as official timer of the renowned Bendix Trophy and chairman of the board of directors of Southern California International Air Races, Inc.

Captain Charles W. Boggs, Jr., in command of the Marine Squadron on the carrier Bairoka in maneuvers described as the "Battle of Kodiak," is the son of the former publisher of daily newspapers in Tulsa and other oil cities. Boggs senior is now identified with the California petroleum industry.

Norman Andrew Promoted by M. O. Johnston Oil Field Service Company

N. K. Andrew

W. F. Bettis, Manager of M. O. Johnston Oil Field Service Company, announces the appointment of Norman K. Andrew as his assistant. Norman has had fifteen year's experience with various types of Service Tools in California, Texas, Louisiana, Arkansas, and Kentucky, and was formerly an instructor in the College of Engineering at the University of Southern California.

He has been with the Johnston Organization for the past ten years, except for the time he spent with the Eighth Air Force in England during the war.

Andrew is an active member of the Tuesday Export Luncheon Group of the Los Angeles Chapter of Nomads, an associate member of The Nomads, and devotes a great deal of his time to foreign oil men.

Reese H. Taylor, president of Union Oil, delivered the principal address at the annual dinner of the petroleum division of the American Institute of Mining and Metallurgical Engineers at the meeting in San Francisco. A. C. Rubel, vice president of Union, and W. H. Geis, consulting engineer, presented papers in the field of engineering education. William Moeller, Jr., vice president of the Southern California Gas Company, spoke on "The Natural Gas Industry of Southern California." L. E. Porter of Richfield Oil, contributed to a symposium on world oil production. J. J. Jakosky presented a paper on geophysical economics.

Allen H. Long, Manhattan Beach oil company executive, is the new foreman of the 23-member Federal grand jury sworn in by Chief Judge Paul J. McCormick of Federal Court in Los Angeles. The new grand jury will be in session until next September.

Bower New Chief Engineer at Waukesha Motor Company

Lloyd L. Bower has been appointed Chief Engineer of Waukesha Motor Company, succeeding James B. Fisher, who retired on January 31, after 35 years of active duty, according to the announcement of James E. DeLong, President.

Lloyd L. Bower, Chief Engineer Waukesha Motor Company

Bower has been active in the Company's Engineering Department more than twenty years, and as Fisher's assistant for half that time.

Bower is a graduate of the University of Michigan, School of Engineering, class of 1916. Following graduation, he held several technical appointments before entering the Armed Forces and sailing for France in September, 1918 as Sergeant of the 21st (Light Railway) Engineers.

Following World War I, he entered the automotive transport field as layout draftsman and transmission specialist for the Garford Truck Company of Lima, Ohio. In 1921 he became assistant to the Chief Engineer of the Transport Truck Company, Mt. Pleasant, Michigan, later returning to the Garford Company where he remained until his appointment as Installation Engineer for Waukesha Motor Company in 1927.

Bower is a member ('36) of the S.A.E. and past-Chairman of the Milwaukee Section; Chairman of the Engineering and Technical Committee of the I.C.E.I.; member of the American Legion, Army Ordnance Association, Merrill Hills Country Club, and an active member and past officer of the Methodist Men's Club of Waukesha. He is married and has two children, both of whom are also married. He makes his home in Waukesha.

The Du Pont Company announced recently the promotion of Afton D. Puckett to the position of district laboratory coordinator in the Petroleum Chemicals Division and the appointment of John N. C. Cameron as manager of the division's Gulf Coast district laboratory at 4141 Dennis Street, Houston, Texas. The division markets tetraethyl lead antiknock compounds and petroleum additives.

Mr. Puckett, who lives at 805 Philadelphia Pike, Claymount, Delaware, formerly was in charge of studies of antiknock properties of motor fuels in Du Pont's Combustion Engineering Laboratory at Deepwater Point, New Jersey. In his new position, he will coordinate technical services extended by Du Pont through five district laboratories to the oil refining industry of the entire country in connection with its use of tetraethyl lead and other petroleum chemicals.

Before coming with Du Pont about a year ago, Mr. Puckett had been associated with the Tide Water Associated Oil Company at Drumright, Oklahoma; the National Bureau of Standards at Washington, D. C.; and the U. S. Bureau of Mines Petroleum Experiment Station at Bartlesville, Oklahoma. He was born November 21, 1912, at Denison, Texas, graduated from Oklahoma A. & M. College in 1936 with a B. S. degree in chemical engineering, and is the author of several technical papers on combustion characteristics of motor and diesel fuels.

"Two young cats are the pride and joy of Mr. and Mrs. Clifford P. Gottwals, the Shell oilman," says an amusing story in the San Jose Mercury-Herald. The story relates how the cats were missing until Mrs. Gottwals called a service man to check her laundry machine. The service man turned on the power for a "dry run" and a few minutes later opened the machine to find two very bewildered kittens, which were unhurt, but spun dizzy.

Stark Fox, Oil Producers Agency in Los Angeles, returned to Sacramento on March 3 to watch the legislative mill in the capitol city.

Royal Robert Bush, 71, retired Long Beach oil producer and refiner, recently was named winner of the annual Pasadena Arthur Noble Medal for outstanding service to the community. Mr. Bush, a resident of Pasadena since 1922, was instrumental in the founding of the All Nations Boys' Club in Los Angeles in 1927. He has been a member of the board of directors of the Boys' Club of America since 1931. Since his retirement several years ago, the oil man has devoted his time largely to boys' welfare work. He has been a director of the Pasadena Boys' Club for the past seven years and from 1945 to 1947 he served as chairman of the Southern California Area Council of Boys' Clubs. Among his many other activities, he is a trustee of the Institute of Technology.

Frazer Macmillan, 24, son of Raymond S. Macmillan, president of the Macmillan Petroleum Corporation, and Miss Betty Burns, 22, were married in a church ceremony in a Chicago suburb. Headquarters of the Macmillan organization are in Los Angeles.

Husky Refining Co. of Cody has widespread operations in Alberta and Saskatchewan. These are handled by a Canadian subsidiary. Recently the company appointed Ben Zwick vice president in charge of Canadian operations. Zwick, a graduate of the Colorado School of Mines, was formerly executive assistant with Standard Oil Co. of New Jersey, and has had experience in South American operations.

Stanolind Oil and Gas Co. has ambitious plans for Canada this year. The company plans to spot half a dozen wildcat wells in northern Alberta. One venture is slated for the Ellscott area southeast of Athabaska and the rest are between Calling Lake and Lac la Biche north and east of Athabaska—all rank wildcat country.

Rocky Mountain NEWS

Colorado—Idaho—Montana—New Mexico—Utah—Wyoming—Western Canada

Bulletin

The Wyoming state senate defeated the proposed severance tax on oil production by a vote of 16-12 on Feb. 16. The tax would have levied two per cent on all oil production in Wyoming, with a provision for refunding the tax on crude refined within the state.

Had the measure passed, the oil industry was prepared to attack its constitutionality in the courts.

State Senator E. J. Zoble of Natrona county was given a good share of credit for marshalling opposition to the severance tax, which was debated in a joint session of the house and senate the day it was killed.

The measure had almost unanimous support of farm and ranch groups in the state.

Wyoming

California Co.'s discovery of 34 gravity oil on the Borie structure, only eight miles west of Cheyenne, topped drilling developments in Wyoming last week. The well, No. 1 Morton King, recovered 2,200 feet of green oil on a 55-minute test of the Muddy sand, at 8,494 ft.

Oddly enough, the discovery was made only a quarter mile from a "dry hole" drilled by Amerada 10 years before. This test was abandoned at 9,385 feet after logging some shows in the Muddy, apparently then considered uncommercial.

This new discovery, illustrating how an area abandoned by one firm can be proved by another company a few years later, is expected to stimulate exploration in the Denver basin of northern Colorado and southern Wyoming. Leasing activity has been stepped up in this area, and several tests are projected south of the Wyoming line this summer.

California Co. is now coring in the Dakota sandstone in the discovery well and has not indicated whether it plans to complete the venture as a Muddy producer, or deepen to Tensleep for a test.

Superior Oil Co. is now more than three miles deep in its closely guarded venture at Pacific Creek, in Sublette county, which now holds the depth record for the Rocky mountain region. Last drilling depth given for the well was 15,900 feet, with the last and only top reported as the Mesa Verde, at 8,434 ft. The well should be in, or nearing the Cretaceous beds, although these may be as deep as 17,000 feet. This being a rank wildcat in unexplored territory, correlation is a matter of guessing. Ground elevation is 7,087 ft. There are reports the well will be drilled to a total depth of 20,000 ft., regardless of oil shows found on the way—and this for the purpose of giving the National 160 rig a thorough test.

Phillips Petroleum Co. scored a second producer in the new South Cole Creek, Converse county. The second well made 2,340 feet of oil and 180 feet of oil and gas cut mud on a 30 minute drill stem test recently. This corresponded closely to the discovery well, which was completed for initial production of 150 bbls. of oil daily through 12/64 inch choke. The second well, bottomed at 8,400 feet, will be deepened to Tensleep for the first test of that zone in the new field.

Phillips also found saturation in a thin sand at the base of the Chugwater formation in its venture at Northwest Sheldon Dome, Fremont county, but is drilling ahead for Tensleep possibilities.

Stanolind Oil and Gas, meanwhile, abandoned two important wildcats in Wyoming—one the deepest "dry hole" in the Rocky mountain region. It was the 13,447-ft. test at Big Sand Coulee in Park county. This venture, drilled on a seismic high on the northwest side of the Big Horn basin, logged slight shows of oil in the Phosphoria and Tensleep and found the Madison lime dry. Some sample tops: Frontier 10,022, Second Frontier 10,319, Dinwoody 12,895, Phosphoria 12,982, Tensleep 13,066 and Madison, 13,401.

Also disappointing was Stanolind's abandonment of its first deep test in the scenic Jackson Hole country of western Wyoming. The venture on Spread Creek was plugged at a total depth of 7,581 feet in the Mowry shale, after crossing a fault zone and drilling through steep, vertical dips. Slight shows of gas in the Frontier zone proved noncommercial after repeated perforating and drillstem tests.

The failure does not necessarily condemn Jackson Hole for future drilling. Geologists are convinced there is oil trapped in the trough between the sharply tilted mountain peaks. Some natives of this tourist mecca rejoiced that the two oil ventures tried so far—Carter and Stanolind—have failed to find production. They fear it will spoil the scenic beauty of the region. But Stanolind probably will continue seismic studies in the area before giving up its extensive acreage block, and may drill a new test this summer. Sinclair also has lease interests in the region. The venture has been a costly one for Stanolind. Merely building the road to location cost an estimated $100,000.

Continental, too, is prepared for disappointment at its wildcat venture west of Afton, near the Idaho line in western Wyoming. The well (sec.

Safety

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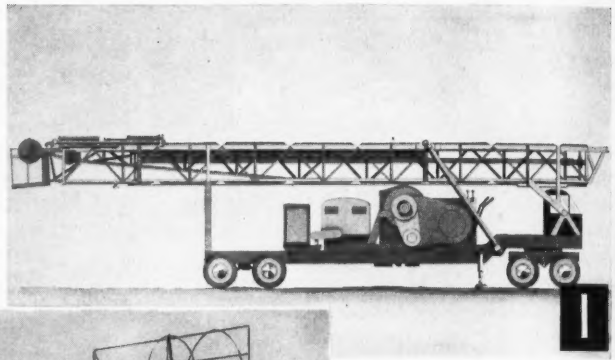

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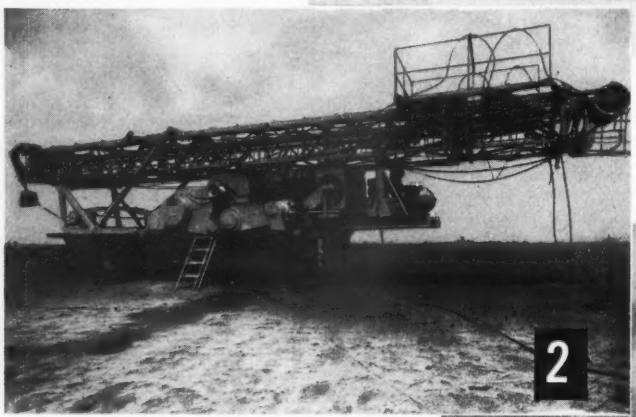

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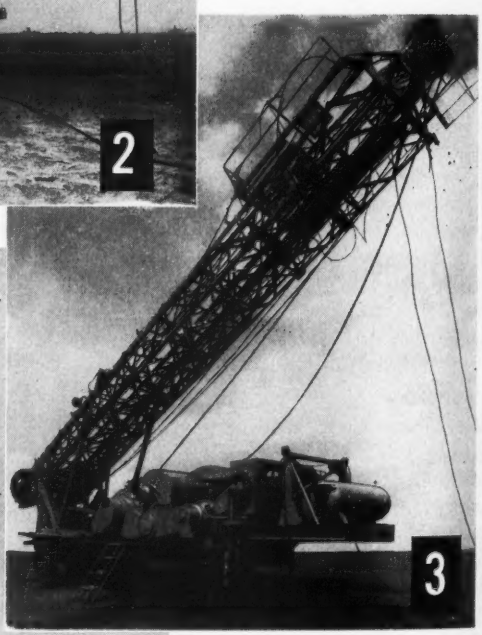

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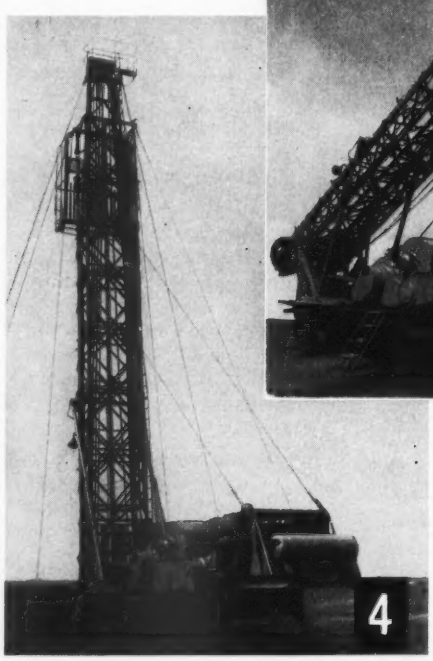

4

Mounted on a 4-axle truck, propelled by the engine of the winch. Front end steering with 2-axle steerable bogie.

Here is portable power that is compact, convenient, easy to maneuver and quick to spot at the well site. Here you see semi-trailer mounting.

Mast at 45° angle—going up with plenty of HYDRAULIC power in the two side rams. HYDRAULIC power puts the mast in a vertical position in only a few moments time.

Mast in vertical position—the HYDRAULIC center ram is smoothly and powerfully raising the telescoping top section. Fool proof hydraulics and construction assure absolute safety. When fully extended, the top section is double locked into a rigid position. The bracing design of this mast gives greater than ever safety for heavy lifting. Now the Wilson "TORCAIR" winch will be put in operation.

POWER RIG EQUIPMENT CO., INC.

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EXCLUSIVE WEST COAST DISTRIBUTOR OF WILSON MANUFACTURING COMPANY, INC.

15-30n-119w) has encountered 83 degree dips and is now drilling in Red Beds at 3,000 feet. Shell's wildcat at Smith Fork, also near the Idaho line, is drilling below 5,500 ft. in hard sandstone and dolomite, after passing the Dinwoody at 3,820. It expects to find Tensleep at 7,500 ft.

Atlantic Refining seems certain of scoring success in the Tensleep at its Riverton, Wyo., venture, which already tested 10 million cubic feet of gas per day and some distillate in the higher Phosphoria zone. The operator cored heavy saturation in the Tensleep at its No. 1 Tribal, 25-1s-4e, whose derrick is seen from the farming town of Riverton in Fremont county. Topping the Tensleep at 11,661 ft., the operator cored nearly 30 feet of Tensleep and is drilling in hard, quartzitic sand before running the first drill stem test.

The Big Horn basin picture brightened with the report that Phillips Petroleum Co. had struck 42 gravity oil in the Phosphoria at Golden Eagle in Hot Springs county. The discovery well made 5,040 feet of oil and 90 feet of oil cut mud on an hour's drill stem test from 9,053-9,075 ft. Tensleep will be tested next. Heretofore the field has produced from shallower Muddy and Greybull sands.

And here's a quick glance at other Wyoming developments: Seaboard and Husky have completed the Little Sand Draw discovery well, between Golden Eagle and Gebo fields, Hot Springs county, for 250 barrels initial (22/64ths choke), 35 gravity. Esperado Mining Co. is reported still coring in Dakota at Northwest Lodgepole, northwest of the Mush Creek field. Husky completed its deep test at Waugh Dome, Hot Springs county, for a 240-barrel pumper from the Embar. Amerada has bottomed its Sage Spring Creek test near Teapot Dome at 8,028 feet and is now shut down by weather, pending plans to deepen to Tensleep. No significant shows were found. Trigood is taking two wells down to the Tensleep on the southeast side of the fast-growing Worland field in Washakie county. Rumors continue to crop up concerning Shell Oil Co.'s rank wildcats at Clear Creek, Johnson county, Wyoming, and Ash Creek, Carbon county, Montana—both important tests on the west side of the Powder River basin. But company officials deny any shows to get excited about. Union Oil Co. and associates are boring down at a good clip in the Moxa Unit, Lincoln county, with the wildcat in 30-19n-112w now below a mile deep. It is scheduled for a 12,500 foot Morrison test and adjoins Mountain Fuel's Church Buttes gas field. Drilling activity in the state continued to be stymied by a succession of blizzards, which began to abate in the latter half of February.

Colorado

Crude oil production in Colorado declined about 2,000 barrels per day to an average of 62,645 bbls. for the week ending Feb. 5, according to figures released by state officials at Denver.

Daily runs from the various fields in the state were listed by the state inspector's office as follows: Berthoud 6, Boulder 20, Orchard 10, Clark Lake 0, Elk Springs 119, Florence 62, Fort Collins 353, Hiawatha 169, Iles 1,433, Moffat 208, Maudlin Gulch 0, North McCallum 353, Powder Wash 95, Price-Gramps 0, Rangley 52,493; Tow Creek 127, Wellington 0, and Wilson Creek 155.

Western Natural Gas Co. and Byrd-Frost, Inc., have spudded a new outpost venture in the Dove Creek gas-condensate field of western Montezuma county, Colo. McConnell Drilling Corp. has the drilling contractor for the No. 1 J. W. White in 9-38n-19w, located 1¼ miles southwest of the discovery well.

Houston, Tex., interests have acquired 30,000 acres of government and state leases in the Hartzel area, Park county, Colo., and plan to make location for a wildcat test. The McDannald Oil Co. of Houston, headed by A. T. McDannald, consummated a deal with Holly Oil Co. of Colorado Springs, and Wycomo Oil Co. of St. Louis to drill a 4,500 ft. test about May 1. Two shallow wells drilled a number of years ago found shows of oil in the Pierre shale. The new test may be drilled in 1-12s-75w.

Another Colorado wildcat is in the offing for the Log Hill structure in Ouray county, where Paul W. Harr, head of Stanford Petroleum Co. of Ouray, and Byrd Frost, Inc., have acquired around 10,000 acres.

The area lies east of the Horsefly Peak block where Parker Drilling Co. plans a wildcat this spring. Pure Oil Co. is also blocking acreage at the proposed Horse Fly unit in twp 46n-13w, Montrose county.

Arizona

General Petroleum found the granite at 3,350 feet at its Little Carrizo wildcat in Navajo county, Arizona, northeast of Holbrook, and drilled ahead another 100 feet in hopes of finding a sill. Slight shows were logged in upper formations, and these may be tested before the well is written off.

Utah

Recovering from its worst winter weather in recent years, Utah looks forward to the biggest oil exploration year in its brief history as an oil state this summer. Already the signs point to an active leasing and wildcatting season in nearly every county of the state.

A block of 63,000 acres is now being assembled by the Barnsdall Oil Co., Union Oil Co. of California and the California Co. embracing the Circle Cliff structure in Garfield county —one of the largest surface structures in the state. A deep test of the structure—where Ohio drilled a 3,200-ft. dry hole several years ago—is contemplated this summer.

Another big lease play is reported east of Vernal, in Uintah county. General Petroleum has acquired fee lands east of the town. Carter is blocking out acreage northwest of Ashley Valley (Utah's first commercial oil production), and south of Vernal. Cities Service is said to be leasing north of the Naples structure. Three wells are now drilling at Ashley Valley, where last year Equity Oil Co. made a Weber sand discovery. Paul Stock of Cody and Joseph Juhan joined in the venture.

No new discoveries have been made recently in Utah, although Carter and Stanolind logged staining in cores at No. 1 Tribal in the Roosevelt area, Uintah county. A drill stem test failed to confirm the show. The venture is about 35 miles west of Carter's Vernal Unit, where a fourth deep wildcat—No. 1 Ruth Nelson—awaits further testing.

Pure Oil Co. has abandoned its

first venture on the Northeast Salt Valley area in Grand county, Utah, at a total depth of 3,036 ft. in the Paradox salt. No shows were reported.

California Co. continues pumping tests at its Upper Valley discovery in Garfield county. The well was last reported pumping about 400 barrels fluid daily, running about one-fourth oil. Production comes from a lime in the Pennsylvanian between 8,777 and 8,797 ft. At first the well swabbed at the rate of 200 barrels of clean oil, but after deepening 60 feet started making water. It was plugged back to 8,791 ft.

Pacific Western and Equity Oil Co. are drilling below 9,300 ft. at the Thompson venture in Grand county (33-21s-21e), with no shows reported.

At Big Flat, in Grand county (11-26s-19e), Pacific Western and Tide Water Associated are drilling below 3,700 ft. A drill stem test just short of 3,500 ft. recovered 30 feet of oil cut mud in 45 minutes. The well is scheduled for Mississippian at around 7,000 ft.

Some gas shows were logged by Seaboard at its Bitter Creek venture in Uinta county, now drilling around 8,000 ft.

Amerada Petroleum Corp., has abandoned its first wildcat in the Green River area, Grand county, at a total depth of 5,645 ft., notwithstanding widely circulated press reports of an oil discovery. Another location has been staked in the same quarter section of 2-22s-16e.

Montana

The classic case of the lost hammer which cost $20,000 was repeated, with variations, at British-American's wildcat at Clark Fork, Carbon county, Mont. A roughneck dropped a hammer in the hole, causing an expensive fishing job. But he did not stick around for another opportunity to drop the tool, it was learned from Paul Faust, company geologist. At last reports, B. A. was still fishing at 8,949 ft., total depth, after topping the Chugwater at 8,475. The well is scheduled to test Madison. Some gas and distillate was recovered in the Lakota.

Most Montana operations were slowed by the weather in February.

Shell was coring in the Tensleep below 9,900 ft. at Ash Creek, in Big Horn county, with no shows reported for the seismic venture.

Amerada and General Petroleum were drilling below 6,700 at No. 2 Hougen, the first deep test at Melstone, Musselshell county, after topping the Madison at 5,460. Slight oil stain was found in dense dolomite around 6450. The venture expects to find the Cambrian at 7300.

Meanwhile, Amerada suspended operations at No. 3 Hougen, in 26-10n-29e, at Melstone, located one-half mile south of the firm's discovery well. Saturation was found in the top of the Amsden sand at 4,278 ft., but perforating and testing turned up mostly water.

Amerada and British-American are drilling below 4,600 at Box Elder dome in Petroleum county, after calling the Madison at 3510. The well tested water in the Kibbey at 2635.

Western Canada

Husky Refining Co. of Cody, Wyo., drilled 41 wells in Wyoming and Montana last year and its Canadian subsidiary participated in the drilling of 24 wells in western Canada.

The company continued its expansion program in 1948, underscoring its position as one of the leading independents in the industry.

L. W. Lee, vice president of refining and sales, and M. R. McArthur, vice president of exploration and production, head up the principal divisions. M. M. Luther, formerly with Standard Crude Oil Purchasing Co., has joined Husky as treasurer. Ben F. Zwick recently was made vice president of the Canadian subsidiary, the Husky Oil & Refining Ltd.

The Canadian refinery was doubled in capacity from 6,000 barrels per day to 12,000 bbls. per day. This refinery handles the black oil produced in Lloydminster, Alberta and Saskatchewan, Canada.

Husky recently purchased the Carter refinery at Lovell, Wyo., and is now operating it.

The firm has three rigs in the states and two in Canada. In addition several wells were contracted to outside drilling firms.

Husky has stepped up its tempo in the land and exploration field. M. M. Johnson is the chief geologist and William B. Smith is the land superintendent.

Personnel in the states increased from 178 to 260. Further expansion is contemplated this year.

Sharp cutbacks in production o low gravity, heavy black oils fro Rocky mountain fields have begu to slow up the pool developme program this year, although wild catting is expected to continue a a brisk pace as major operators see to captitalize on investments a ready made inexploration and lea ing.

Pipeline proration came into th picture for the first time since th war when lack of demand in mi dlewest markets caused fuel o stocks to fill all available storag capacity.

Stanolind Pipe Line Co. cut dow production of black oils of 24 gra ity and lower by 50 per cent earl in February. This reduced British A m e r i c a n ' s production at th Steamboat Butte field in Fremo county, Wyo., from 11,000 to 7,0 barrels per day. Brinkerhoff Dril ing Co. was cut to 800 barrels p day in nearby Pilot Butte field.

Drastic cuts were made in oth large black oil fields, such as Ha ilton Dome, Oregon Basin, Byro Garland, and Little Buffalo Basi all in Wyoming's Big Horn basin

On the heels of the cutbacks black oil production, Continent Oil Co. suspended its 18-month drilling program at the Circle Ridg field in Fremont county and als in the new North Sunshine fiel Park county. Stanolind terminate its ambitious drilling developme program in the Madison lime a Wyoming's largest field: Elk Bas in.

Fuel oil dropped from $2.60 t $1.40 per barrel, and oilmen specu lated that the posted price of lo gravity crudes (now $1.7 for 1 gravity) would have to be revise downward this year.

Oil executives were still hopefu however, that the summer deman for road oil might stabilize the pric situation this year.

Blamed for the surplus situatio were such factors as absence of coa strikes this winter, an unusuall mild winter in the middlewest an east, and increased importations o foreign crudes.

The uncertainty over drilling op erations this year caused some drill ing contractors to cast about fo new areas to keep their rigs an crews busy. It was learned on goo

authority that Loffland Bros., who have about 13 rigs operating in Wyoming, are planning to organize a Canadian subsidiary and may move some rigs to western Canada. Several other large drilling contractors are eyeing the Canadian theater of operations with increasing interest. Increased production in the prairie provinces is almost meeting the capacity of Canadian refinereis, lessening the need for British-American, hitherto a large imports from the states.

shipper of light crudes from the Mush Creek area of northeastern Wyoming, has served notice it will buy no more of this oil for shipment to its refinery at Moosejaw, Sask., after May 1.

Exploration activity, nevertheless, continues to hum in the Rocky mountain states. Seismograph crews were idled in January and February by the unprecedented blizzards which have paralyzed transportation in the region. With the storms abating, they are moving out into the field again to shoot profiles.

Another possible setback to oil development plans in Wyoming was seen in the two per cent severance tax on oil and gas passed by the state house of representatives by the margin of 31 to 24 on Feb. 8. The bill, originally calling for a four per cent over-ride on pro-ride on production for the state of Wyoming, was amended to two per cent and sent to the senate for final action. A close battle was anticipated in the senate.

Oilmen descended on the state capital at Cheyenne in a last ditch effort to defeat the severance measure. They told the house revenue committee that the proposed levy is unjust, that rather than bring in more revenue, it actually would curtail present activities in Wyoming.

Value of the oil industry to the state was set forth by W. H. Everett of Casper, attorney for the Ohio Oil Co. He pointed out that Wyoming has received more than $30,000,000 in royalties on state leases alone. As an indirect result of the oil industry, he said, Wyoming has benefitted from an annual payroll in excess of $41,000,000.

Several conceded that the tax "will not break" the oil industry, but added that its imposition might mean curtailment of activities to an extent that the whole of Wyoming would suffer economically.

Interests supporting the tax measure included the Wyoming Stock Growers, Wyoming Cooperative Council, Wyoming Home Demonstration Council, Wyoming Grain and Feed Dealers, Wool Growers' association, Wyoming State Grange, Dairymen's association, and the Wyoming Farm Bureau.

Oil industry spokesmen opposing the bill included Glenn Nielsen, Cody, president of the Husky Refining Co.; R. B. Curran, Casper, W. H. Barber Co.; Charles S. Hill, Denver, an independent operator; E P. Palmer of Denver, representing Superior Oil Co.; J. A. Eberley of Riverton, Wyo., an independent; Ernest Baker of Bay Petroleum Corp., Denver; John Pickett of Frontier Refining Co., Cheyenne; Alfred C. Torgeson of Newcastle, A. L. Deaton of Carter Oil Co., Billings; and E. J. Sullivan of Casper.

Officers of the Rocky Mountain Association of Geologists held their annual dinner dance at the Park Hill Country club in Denver on Feb. 18. The affair was well attended—since many geologists were grounded by the blizzards.

The spring meeting of the production division for the American Petroleum Institute will be held at the Gladstone hotel in Casper May 26 and 27, it was announced by James C. Johnston, Rocky mountain chairman. D. T. Hoenshell of General Petroleum is in charge of general arrangements; Zack Brinkerhoff, program; J. W. Gillespie of National Supply, entertainment; A. F. Barrett, registration, and J. Howard Barnett, Stanolind, meeting room arrangements.

In Utah, the California Co. finally completed its Pennsylvanian discovery in Upper Valley (12-36S-1E, Garfield county). The well pumped 480 barrels of fluid in 24 hours, 10 to 15 per cent oil, thru perforations in the lime pay zone topped at 8777.

Amerada Petroleum Corp. abandoned its first wildcat in the Green River structure, Grand county, at total depth of 5645, and has announced location for a new offset test in the same section (2-22S-16E).

Seaboard is drilling below 7400 feet at its Bitter Creek wildcat in Uinta county (10-10s-22e). The well logged some gas shows in upper zones and is now in Tertiary.

Carter and Stanolind are nearing 6000 feet at the Roosevelt wildcat (21-1S-1E, Uinta county). Traces of gas have been found in cores.

Union Pacific Issues Rate Supplement

Now in the course of preparation by Union Pacific Railroad is Supplement 1 to "Memorandum of Increased Rates and Charges," which will reflect changes and additions occasioned by the issuance of the New Composite Master Tariff X-162-B and X-166-C, effective February 15.

This supplement will show increases authorized in Tariff of Emergency Charges X-168, effective January 11, 1949. It will also contain increase table reflecting 4, 5 and 6 per cent increase to total freight charges of 1c to $1,000, including a 3 per cent table for figuring the Federal Transportation Tax.

Distribution of the original 62-page booklet simplifying the checking of rates has met with enthusiasm by shippers and traffic men, and this first supplement is designed to keep the booklet current and complete.

Copies of the supplement may be obtained free of charge from W. T. Burns, general freight traffic manager, Union Pacific Railroad at Omaha, or a representative of the Union Pacific in your territory.

Production for the prairie province was 36,447 barrels from 618 operating wells during the first week in January, the Alberta Conservation Board reports. Leduc produced 20,497 barrels from 174 wells; Turner Valley 10,222 barrels from 281 producing wells, and Lloydminster 1,772 barrels from 68 wells. The remaining 2,386 barrels came from 95 other wells.

California Oil World's Monthly Summary

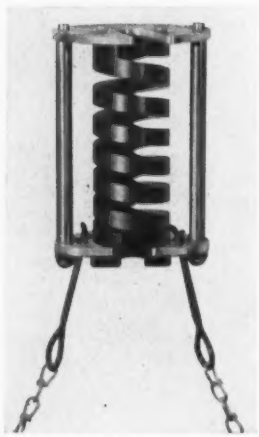
CALIFORNIA DEVELOPMENT AND PRODUCTION

	DECEMBER, 1948, DEVELOPMENT				PRODUCTION	
	Active Drilling Wells	Oil Wells Completed	Initial Production B/D	Oil Wells Completed Year 1948	Daily Average December 1948	Daily Average December 1947
SAN JOAQUIN VALLEY REGION						
Ant Hill	.....	.....	.....	.....	941	1,230
Antelope Hills	.....	1	57	1	1,337	1,305
Bellevue	.....	.....	.....	.....	264	359
Belridge—North	.....	.....	.....	1	3,303	3,583
Belridge—South	2	5	124	40	7,215	5,499
Blackwell's Corner	.....	.....	.....	.....	125	130
Buena Vista	1	2	23	18	44,502	46,166
Canal	.....	.....	.....	.....	1,895	2,066
Coalinga Group						
Eastside	6	3	55	64	19,524	18,307
Oil City	.....	.....	.....	.....	69	87
Coalinga—Nose	.....	.....	.....	.....	53,880	52,688
Coalinga—Northeast	1	.....	.....	3	9,220	8,469
Guijarral Hills	5	3	2,211	5	1,602	.....
Pleasant Valley	1	.....	.....	1	3,604	3,883
Jacalitos	2	2	630	22	6,857	4,907
Westside	1	3	92	47	6,502	6,457
Coles Levee—North	3	1	64	7	17,662	17,223
Coles Levee—South	.....	.....	.....	1	2,842	3,258
Edison	5	8	1,404	32	11,769	9,827
Elk Hills	4	3	970	6	2,467	6,908
Fruitvale	1	.....	.....	3	6,664	6,317
Greeley	1	.....	.....	.....	13,949	14,030
Helm	.....	.....	.....	.....	2,827	4,143
Kern Bluff	2	11	650	67	2,773	315
Kern Front	.....	2	86	51	8,385	8,634
Kern River	11	14	329	257	12,687	11,080
Kettleman North Dome	3	.....	.....	9	34,085	36,727
Lanare	.....	.....	.....	.....	1,314	1,417
Lost Hills	2	6	223	81	8,136	6,181
McKittrick Group						
Belgian Anticline	1	1	254	4	1,238	973
Cymric	.....	.....	.....	57	12,934	16,266
McKittrick	.....	1	3	6	2,802	2,878
McKittrick Front	.....	.....	.....	3	1,453	1,333
Salt Creek	.....	.....	.....	.....	5,195	6,441
Sheep Springs	.....	.....	.....	.....	633	1,444
Temblor Ranch	1	.....	.....	.....	91	104
Midway-Sunset	8	6	237	98	40,748	41,230
Mt. Poso Group	3	.....	.....	17	11,985	13,173
Mountain View	.....	4	506	17	3,430	4,314
Paloma	4	2	1,041	28	12,356	10,626
Poso Creek Group	.....	1	20	16	2,944	3,534
Pyramid Hills	.....	.....	.....	.....	208	255
Race Track Hill	.....	.....	.....	4	1,871	1,839
Raisin City	1	1	160	9	2,970	2,609
Rio Bravo	.....	.....	.....	.....	12,009	12,524
Riverdale	.....	.....	.....	1	2,671	3,849
Round Mountain Group	1	.....	.....	17	7,219	7,834
Russell Ranch	4	14	8,176	42	9,642	.....
Strand	.....	.....	.....	.....	629	813
Strand—East	.....	.....	.....	.....	424	563
Tejon Ranch	.....	1	125	6	2,644	3,444
Ten Section	1	.....	.....	4	7,001	7,462
Union Avenue	.....	.....	.....	.....	250	315
Wasco	.....	.....	.....	.....	76	147
Wheeler Ridge	1	.....	.....	13	652	216
Other Fields	7	3	339	40	1,774	932
TOTAL—San Joaquin Valley Region	83	98	17,779	1,098	432,249	426,308
COASTAL REGION						
Santa Maria District						
Barham Ranch (Los Alamos)	.....	.....	.....	.....	.....	144
Casmalia	.....	3	187	14	1,304	786
Cat Canyon—East	1	.....	.....	3	619	381
Cat Canyon—West	5	4	959	47	18,123	13,641
Four Deer	1	1	48	6	728	335
Gato Ridge	1	.....	.....	7	3,507	3,827

	DECEMBER, 1948, DEVELOPMENT				PRODUCTION	
	Active Drilling Wells	Oil Wells Completed	Initial Production B/D	Oil Wells Completed Year 1948	Daily Average December 1948	Daily Average December 1947
COASTAL REGION—Continued						
Guadalupe	1			3	50	
Lompoc		1	100	25	6,614	5,315
Olivera Canyon	1			5	693	285
Orcutt	2	2	161	19	4,703	4,868
Santa Maria Valley	1			18	18,834	22,431
Tinaquaic				2	8	
Zaca Creek	2	2	154	11	3,033	783
Santa Barbara District						
Capitan				2	2,014	3,050
Coal Oil Point	1					
Elwood	1			6	7,439	6,796
Santa Barbara					77	49
Summerland		1	8	1	31	
Ventura District						
Montalvo West	1			4	629	177
Padre Canyon	4			14	6,534	4,040
Rincon				2	3,350	3,411
San Miguelito	1	1	1,170	8	7,413	5,076
Ventura Avenue	14	4	2,792	31	52,094	52,369
North Santa Clara Valley District						
Del Valle	3	3	379	26	9,969	9,112
Hopper Canyon					132	240
Oak Canyon				1	1,861	1,890
Sespe Canyon Group	2			2	197	187
Temescal				1	526	558
Others	3	2	197	11	625	520
South Santa Clara Valley District						
Aliso Canyon	3	2	986	9	3,528	3,460
Bardsdale	4	1	104	17	1,326	403
Newhall-Potrero	4	2	84	14	8,406	6,796
Oxnard				1	1,060	1,516
Shiells Canyon				3	968	954
South Mountain	4			22	6,350	5,401
West Mountain	2			5	837	915
Others	10	5	1,193	35	1,448	869
Miscellaneous	1	4	479	25	1,354	195
TOTAL—Coastal Region	73	38	9,001	400	176,384	160,780
LOS ANGELES REGION						
Brea-Olinda	5		349	32	15,311	13,410
Coyote—East	2			14	5,119	4,722
Coyote—West	4			35	15,063	15,232
Dominguez	1	1	121	10	12,295	14,436
East Los Angeles	1			1	986	1,171
El Segundo					290	385
Huntington Beach	9	10	1,656	185	58,883	52,959
Inglewood	1	3	750	37	13,327	11,435
Long Beach	1	1	483	13	22,992	23,008
Montebello	3	2	94	9	6,562	6,996
Newport		2	216	46	6,763	6,613
Playa Del Rey					1,805	1,887
Potrero	1	1	200	5	1,121	1,023
Richfield	1	2	140	8	6,207	6,486
Rosecrans-Athens Group	3	2	295	14	4,808	4,625
Santa Fe Springs				8	15,014	15,751
Seal Beach	2	2	233	16	11,623	11,150
Torrance	1	4	97	18	7,844	7,727
Whittier				3	889	924
Wilmington	15	16	2,610	190	129,317	138,055
Yorba Linda				2	998	206
Other Fields	1	1	203	15	2,746	1,755
TOTAL—Los Angeles Region	51	48	7,447	657	340,963	339,956
EXPLORATORY						
Outpost Wells	33					
Wildcats	21					
Gas Wells	1	2				
TOTAL CALIFORNIA	262	186	34,227	2,646*	949,596	927,044

*Includes gas wells completed and 550 abandoned drilling wells.

New Wire Line Wiper By Patterson-Ballagh



A new Wire Line Wiper which will efficiently wipe any size wire line from ⅛ to ⅞ inches has been added to the already complete line of oilfield specialties made by a west coast manufacturer. This wiper, code; STOGY, features easy adjustment to wire line diameter, quick drainage of fluid, safety linkage that releases when line pulls tool out of the hole, and is completely spark-proof.

The spiral or helical wiping element, which acts as seven, small individual wipers, presents a continuous wiping edge 15 inches long that conforms to the regular lay of the wire line. Wiping edge follows and wipes clean the small spiraling channels formed by individual cables that make up wire line. Design of wiping element is such that the top spirals take most of the wear. Reversal of rubber, code: REFRAIN, gives double service life.

For more information, write Patterson-Ballagh, Division of Byron Jackson Co., P.O. Box 2493, Terminal Annex, Los Angeles 54, California.

Bacon Hills Venture Digs

Redrilling has passed the 7425-ft. mark in Seaboard Oil's No. 37-21 in Sec. 21-28s-20e at Bacon Hills, Kern County. Original depth is 8579 ft.

Extrulite Core Tubes Now Available in Mid-Continent and Rocky Mountain Areas

The complete line of Extrulite Core Tubes for protecting, storing and transporting conventional oil well cores is now available in the Mid-Continent and Rocky Mountain branches of the Reed Roller Bit Company.

These popular light weight Core Tubes are providing geologists and engineers with a new method of handling oil well cores. The possibility of mixing or reversing samples has been eliminated by inserting all pertinent data on a label which is readily visible from the outside of the tube. As the cap that is sealed at the well is red, correct orientation of the sample is assured at all times. The other end is clear and factory sealed.

Tube diameters range from 1 to 4½ inches and standard length for storing purposes is 36 inches. Any length tube is available on special order. Solvent to provide an airtight seal may be purchased. Light weight metal and plastic carrying cases are also available. For more information write Extruders, Inc., 8509 Higuera Street, Culver City, California.

Eastman Electronic Services For Bakersfield Area

Two fully-equipped electronic survey trucks with crews are now permanently headquartered at the Bakersfield office of the Eastman Oil Well Survey Company.

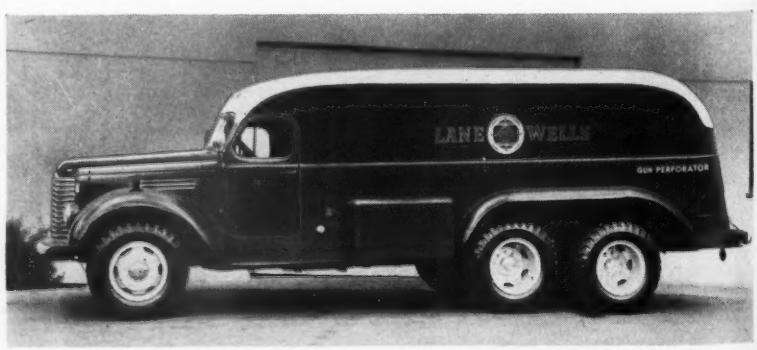
Ralph K. Kammerer is in charge of the electronic units, which are available for use in the San Joaquin Valley for temperature surveying, water location, and surface controlled magnetic surveys.

Lane-Wells Adds 38 Hoist Units

During 1948, a total of 31 new hoist trucks and 7 skid units were added to the Lane-Wells service fleet.

"The expanded operations of the oil industry require more and more quickly-available modern service units. These additions to our fleet are part of our efforts to continue to meet the increasing demands," stated Mort Higgs, Manager of Field Operations for Lane-Wells.

These units contain the latest technical equipment required for modern Perforating, Radioactivity Well Logging and Electrolog Services.



Ready-to-roll for 24-hour service to oil field men is this latest addition to Lane-Wells service fleet. This is the 31st addition made to company fleet during 1948.

LAUGH THIS OFF!!

A backwoods mountaineer one day found a mirror which a tourist had lost. "Well, if it ain't my old man," said he as he looked in the mirror. "I never knowed he had his pitcher took." He took the mirror home and stole into the attic to hide it. But his actions didn't escape his suspicious wife. That night while he slept, she slipped up to the attic and found the mirror. "Hum-m-m-m," she said looking into it, "so that's the old hag he's been chasing."

From the personal account book of an unidentified businessman—one who would obviously prefer not to be identified:

Dec. 1	Advertisement for girl stenographer	$.50
Dec. 2	Violets for new girl	.80
Dec. 7	Weeks salary for stenographer	30.00
Dec. 9	Roses for stenog.	.75
Dec. 11	Candy for wife	.75
Dec. 13	Lunch with stenog.	7.50
Dec. 14	Weeks salary for stenographer	35.00
Dec. 17	Picture show tickets for self and wife	.80
Dec. 18	Theatre tickets for self and stenog.	6.50
Dec. 19	Candy for wife	.75
Dec. 21	Lillian's salary	45.00
Dec. 22	Theatre and dinner with Lillian	21.00
Dec. 23	Miscellaneous	102.13
Dec. 24	Fur Coat for wife	765.00
Dec. 26	Advertisement for male stenographer	.50

—C. B. Robinson in Coronet

The lecturer had reached one of his most telling points: "He who gives in when he is wrong is wise; but the man who gives in when he is right is———"

"Married," someone in the audience shouted.

"I seem to have run out of gas," he said softly.

Her beautiful face was turned up to his; her eyes were glowing dizzily; her head swam. Why not? He was her dentist.

Teacher: "How many bones do you have in your body?"

Willie: "About a thousand."

Teacher: "That's a great many more than I have."

Willie: "Well, I had sardines for lunch."

"Was your husband hurt when he was hit by the car, Liza?"

"Yassah. He suffered from conclusion of the brain."

"You mean concussion, Liza."

"No, suh—conclusion. He's daid."

Friend: Going to India? It's pretty hot. Aren't you afraid the climate might diagree with your wife?

Husband: It wouldn't dare!

Doting Mother: "Papa, Robert's teacher says he ought to have an encyclopedia."

Papa: "Let him walk to school like I did."

"How do football players ever get clean?"

"J'ever hear of the scrub team?"

"They say women are the weaker sex."

"Oh, yeah? Then how come they can put the cap on a fruit jar so that it takes fifteen minutes for the huskiest man to get it off?"

"But you can't withdraw your plea of guilty after the case has been heard!"

"Well, you see, jedge, dat speech ob my lawyer's done convinced me I'se innocent!"

Voice on the telephone: How do you feel this morning?

Second voice: Fine.

Voice: I guess I have the wrong number.

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The quality of craftsmanship and material that goes into the manufacture of every Jensen pumping unit displays itself with each stroke in the field . . . each repeat sale to successful producers. Before your wells go on the pump, go out and see Jensen Units in operation. Talk to Jensen users.

After seeing for yourself, see your Jensen dealer. Weigh costs and operating expenses. Look at specifications. Then you can expect and you'll get greater profits from every Jensen equipped well.

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COFFEYVILLE, KANSAS, U.S.A.

EXPORT OFFICE: 50 Church St., New York City

CNGA Old Timers' Night

The February 3rd meeting was of importance to all classes of CNGA members, young and old. It presented an outline of the development and progress of the natural gas-gasoline industry on the Pacific Coast. It was designed to acquaint the younger members with the early California practices and the improvement over the years, and brought the inactive oldsters up to date with the progress made and the newer techniques employed.

The meeting was in the nature of a symposium with a step by step presentation by speakers well known in the industry. Pictures of typical installations from 1910 to the present time were shown on the screen and personalities, incidents and anecdotes were reviewed so as to give a continuous record of where we were, how we progressed, and where we landed.

A large number of early pioneers who are no longer active were in attendance, as were many of the CNGA founders who are still in harness. We went back to the days of the extraction of liquids by expansion, by use of the wooden grid and bailing wire fill absorbers, and the testing of gas by the Newton tester, and the quadricoil B of M absorber. There were many present who recalled the emulsion headaches of the old horizontal pan type steam still and the difficulties of the truckers transporting raw natural with a plant price of 25¢ per gallon plus in low pressure trucks with questionable arrival at destination with part of a load.

Real progress indeed—in which CNGA has been vitally concerned. In fact, much of the real progress achieved is the result of successive years of creative effort on the part of the CNGA organization and the members who have comprised its working groups.

We have learned a lot since 1910 and this review was a token of the promise still ahead for the industry, the Association and the individuals who are part of both.

Industry and The Cost of Living

Few of us think about it, but industries, like families, have a cost of living problem to face these days. And, in both cases, it has its roots in current prices.

The oil industry is a particularly good case in point, because it has had large dollar earnings which have been the subject of criticism in some uninformed quarters. It may seem that if a company makes millions of dollars over and above the cost of carrying on its business in the course of a year, it has nothing to be concerned about. But that isn't the case.

A company can't stand still, "freeze" its plant and facilities, and expect to remain in business for long. It has to move ahead to keep up with the competition, to satisfy its customers, and to replace equipment which gradually wears out just like the family automobile. That's where the rub comes.

A new refinery costs more than twice as much to build today as it did ten years back. New pipe lines cost up to three times as much. The cost of finding new crude oil reserves to replace those which are being used up has more than doubled in the same period. So the story goes, all the way through the industry. Those profit dollars just won't do the job they once did. As a consequence, more and more of them must be used to buy plants and other physical facilities. And, in many cases, oil companies have to borrow from investors to carry out necessary programs.

So, the cost of living is just as much a problem to industry as it is to farmers, workers, retired people, government employees, or anyone else. Remember that next time you hear "high profits" denounced as an economic crime against the public.

What Happened to The Oil Shortage?

Remember when it was widely forecast that the country was on the verge of a really critical oil shortage? According to the prophets of gloom, homes would be without heat and industries would have to shut down for lack of fuel. The only possible solution, they went on, was for the government to move in and allocate oil, and, in general, run the petroleum industry.

As matters turned out, none of this happened. The government didn't step in, though it seemed close to it a time or two. And there was no oil shortage. It is true that in some areas, for brief periods, there were dislocations and temporary scarcities. But these were taken care of by voluntary cooperation between the oil companies and their dealers and customers, and no one suffered for a lack of petroleum.

At the present time, in midwinter, oil supply and demand are in good balance. Indeed, matters have improved to such an extent that the government itself has revoked rules governing its own agencies designed to hold the use of oil to a minimum.

Why were the forecasts at such a variance with the actuality? The principal reason is this: free enterprise, left alone to meet a problem, provided the solution. It rolled up its sleeves and went to work. It made every facility it had do double duty. It built new facilities as fast as it could. It got the oil out of the ground, it refined it, and it moved it swiftly and efficiently to the consumers who wanted it.

In all probability, government intervention would have made a shortage unavoidable, just as government power monopolies have done. When politics moves in on business, red tape blossoms, incentive is killed, and service and production start downhill.

Statisticians here have pointed out that the nation's steel industry increased its monthly production above 8,000,000 tons for the first time in January. The total of 8,172,236 net tons of ingots and steel for castings was almost 700,000 tons more than January, 1948, output, and about 400,000 tons over the December figure. Expectations are that a greater amount of steel will be turned out in 1949 than the total of 88,533,000 tons reported for 1948.

TIGER BRAND Field Specialist is shown here checking a cross-wind on a drum as part of equipment check to insure proper rotary line application. Even such a small cross-wind as this can cause unnecessary abrasion and reduce life of the line.

How to stop rotary line trouble—before it starts

Here's a man who can help you plan for maximum rotary line performance. He's one of Columbia Steel Company's **Tiger Brand** Rotary Line Specialists. These skilled service engineers will give your equipment a complete check to make sure all parts are working in long-wear harmony, point out any necessary changes and recommend the proper line to use. Sheave diameters, sheave grooves, fleet angles, loads handled, service records . . . these are just some of the items on the Specialist's check-list.

Tough **Tiger Brand** is one line that's under constant control from raw ore right on through to the finish. It's engineered for long wear . . . and to make sure you get all the stamina that's put in it, you are welcome to the services of a **Tiger Brand** Specialist . . . without charge or obligation. Contact your **Tiger Brand** Distributor or any Columbia Steel Company Office.

Columbia Steel Company · San Francisco Los Angeles · Portland · Seattle · Salt Lake City

Tiger Brand Tip

It's not good practice to have more than one layer of line on a drum. But if this can't be helped, the added layers should not cross-wind but should wind uniformly across the drum in each succeeding layer of line.

USS **U·S·S TIGER BRAND Rotary Line**

UNITED STATES STEEL

"I'VE FOUND A 'LIGHTWEIGHT CHAMP' WITH A MIGHTY HEAVY PUNCH!"

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Standard of the Industry